



Dryden Forest Independent Forest Audit 2003-2008



349 Mooney Avenue
Thunder Bay, Ontario
Canada P7C 2A4
Bus: 807-345-5445
www.kbm.on.ca

© Queen's Printer for Ontario, 2009

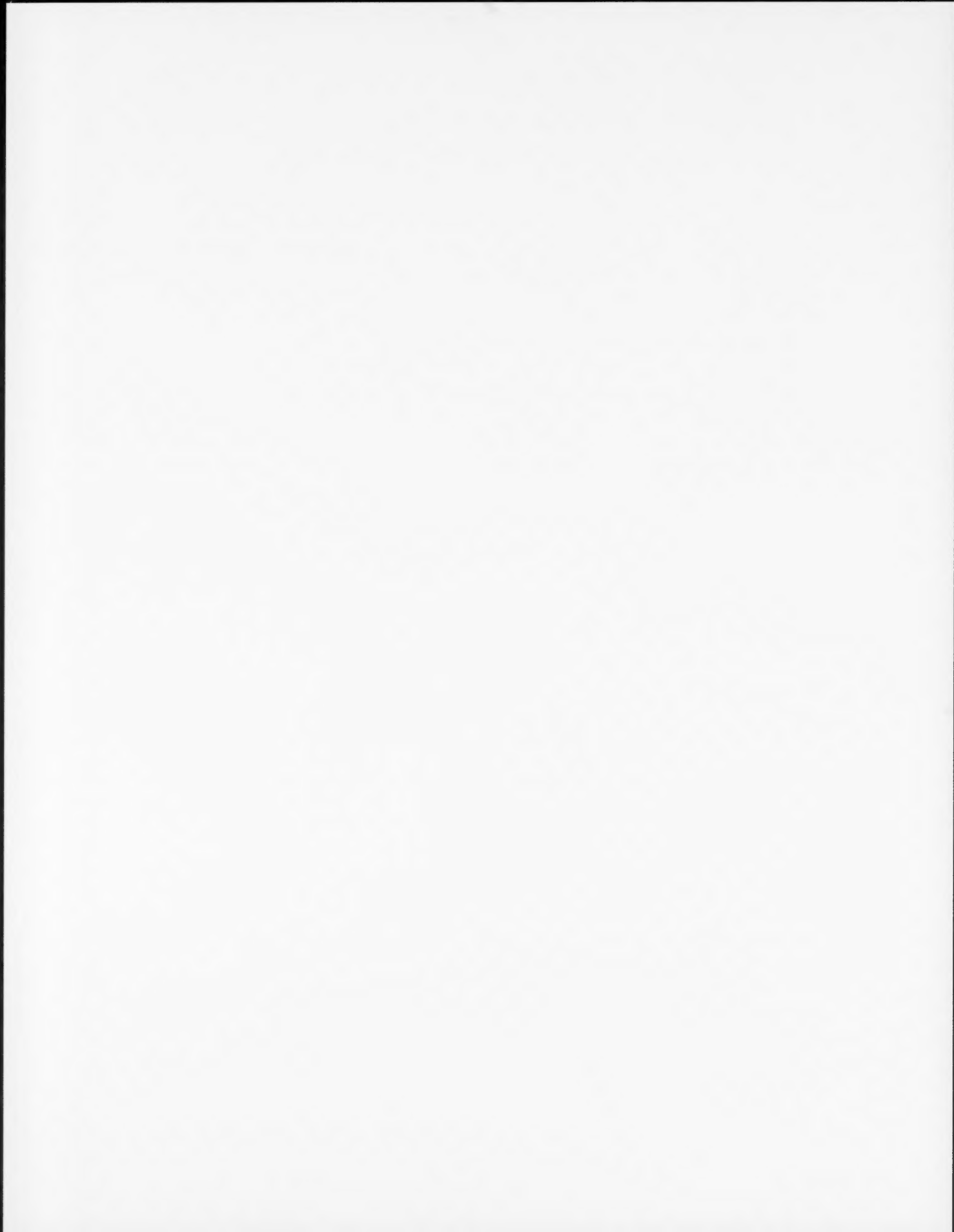


TABLE OF CONTENTS

1.0	Executive Summary	iii
2.0	Introduction.....	1
2.1	Audit Process.....	1
2.2	Forest Management Context	5
2.2.1	Location of the Forest.....	5
2.2.2	Description of the Forest.....	6
2.2.3	Forest Management Issues.....	7
3.0	Summary of Audit Findings.....	8
3.1	Commitment	8
3.2	Public Consultation and Aboriginal Involvement.....	8
3.2.1	Local Citizens' Committee.....	8
3.2.2	FMP Standard Public Consultation Process	10
3.2.3	Issue Resolution.....	12
3.2.4	Individual Environmental Assessments	12
3.2.5	Aboriginal Involvement in Forest Management Planning.....	13
3.2.6	Annual Operations Public Inspection and/or Consultation	16
3.3	Forest Management Planning	16
3.3.1	Plan Author, Planning Team, Chair and Advisor Activities	16
3.3.2	Introduction.....	17
3.3.3	Management Unit Description.....	17
3.3.4	Strategic Direction	19
3.3.5	Operational Planning.....	19
3.3.6	FMP Submission, MNR Plan Review and Approval	22
3.3.7	Contingency Plans	23
3.3.8	FMP Amendments.....	23
3.3.9	Annual Work Schedules.....	23
3.4	Plan Assessment and Implementation.....	24
3.4.1	Plan Assessment	24
3.4.2	Areas of Concern	25
3.4.3	Harvest	26
3.4.4	Renewal	27
3.4.5	Tending and Protection	30
3.4.6	Renewal Support.....	31
3.4.7	Access.....	32
3.5	System Support	32
3.5.1	Human Resources	32
3.5.2	Documentation and Record Quality Control.....	33
3.6	Monitoring.....	33
3.6.1	District Compliance Planning and Associated Monitoring.....	34
3.6.2	SFL Holder Compliance Planning and Monitoring	35
3.6.3	Silviculture Standards and Assessment Program	35
3.6.4	Monitoring Indicators of Forest Sustainability	36
3.6.5	Annual Report.....	37
3.7	Achievement of Management Objectives and Forest Sustainability.....	37
3.7.1	Year 10 Annual Report.....	37
3.7.2	Assessment of Objective Achievement.....	39
3.7.3	Year 10 Annual Report Determination of Forest Sustainability.....	43
3.7.4	Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report.....	44

3.7.5	Conclusions Regarding Sustainability of the Crown Forest	45
3.8	Contractual Obligations	47
3.8.1	Sustainable Forest Licence	47
3.8.2	Concluding Recommendation.....	51
4.0	Summary of Conclusions and Recommendations.....	52
Appendix A – Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report		
		A-55
Appendix B – Audit Team Members and Qualifications		
		B-76
Appendix C – Independent Forest Audit Guiding Principles		
		C-77
Appendix D – List of Acronyms		
		D-78
Appendix E – Summary of Input to Audit Process		
		E-79

LIST OF TABLES

Table 1.	Number of procedures selected for audit and their associated risk category.....	2
Table 2.	Audit sampling intensity for the Dryden Forest	5
Table 3.	Audit team assessment of the achievement of the Dryden Forest 2001-2006 FMP objectives. .	39
Table 4.	Audit team review of the progress towards achievement of management objectives of the Dryden Forest 2006-2011 FMP.....	41
Table 5.	Summary of assessment of forest sustainability.	46
Table 6.	Audit team assessment of achievement of the 2003 IFA recommendations.....	48
Table 7.	Forecasted area and volume allocations of Aboriginal licensees for the first five-year period associated with both the 2001-2006 FMP and the 2006-2011 FMP.	51
Table 8.	Summary of recommendations directed towards DFMC and/or District MNR.	53
Table 9.	Summary of recommendations directed towards Regional and/or Corporate MNR.	54

LIST OF FIGURES

Figure 1.	Dryden Forest audit field site locations.....	4
Figure 2.	Location of the Dryden Forest within the MNR district and regional setting.	6
Figure 3.	Examples of sites where conifer establishment is being hampered by competition.....	27
Figure 4.	A conifer tree that is free of competition and obviously healthy.	28
Figure 5.	Planting along roads to maximize regenerated area.....	28
Figure 6.	Poor microsite selection that led to seedling mortality, an example of poor planting techniques viewed during the audit.	29
Figure 7.	Deer browsing of pine was obvious at a number of sites.....	30
Figure 8.	A free-to-grow area as seen from the air.....	31
Figure 9.	Comparing planned versus actual compliance inspections conducted by DFMC and MNR; comparing the frequency of non-compliance findings by DFMC and MNR.....	35

1.0 EXECUTIVE SUMMARY

This report, for the Dryden Forest (the Forest), documents the results of an Independent Forest Audit (IFA) conducted by KBM Forestry Consultants Inc. All Crown forests in Ontario are required to be audited at least every five years; the requirement for independent audits arising from MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario (2003). Regulation 160/04 of the *Crown Forest Sustainability Act* sets out the specific requirements for conducting the audits.

The Dryden Forest audit covers the five-year period April 1, 2003 to March 31, 2008 and addresses the implementation of the 2001-2006 FMP for the Dryden Forest from April 1, 2003 through March 31, 2006; and, planning, approval, and the first two years of implementation of the 2006-2011 FMP for the Dryden Forest.

Dryden Forest Management Company Ltd. (DFMC) and MNR Dryden District are the principal auditees. DFMC was granted the Sustainable Forest Licence for the Dryden Forest in 1998, and administers the Forest from its office in Dryden, Ontario. The Dryden Forest encompasses 307,107 ha of which 204,575 ha (67%) is Crown Managed Area (including water) and surrounds the town of Dryden in northwestern Ontario. The Dryden Forest lies within the Boreal Forest Region and is dominated by jack pine, poplar and black spruce. A small portion in the south is a transition zone between the Boreal Forest and the Great Lakes-St. Lawrence Forest Regions. The Forest is very well accessed with the Trans Canada Highway, other secondary highways, Local Road Board roads, and primary and secondary forest access roads contributing to an extensive network of access routes throughout.

The audit included a review of all documents associated with forest management of the Dryden Forest during the audit term. From records associated with all sites on which forest management activities occurred during the period under audit, 23 sites were randomly selected by the audit team for examination in the field for the assessment of activities associated with harvesting, forest renewal and tending, free to grow assessments, area of concern prescriptions, and road construction and maintenance including water crossing installation and removals. Selected sites were examined over a two-day period using a helicopter or vehicles for access. The audit also involved interviewing persons and groups involved with or impacted by forest management on the Dryden Forest during the term of the audit. Input from the public was solicited through advertisements in newspapers, and a one-page survey that was mailed to businesses and organizations, and a representative sample of one-third of the individuals listed in the FMP mailing list (as provided by MNR Dryden District). The survey was also available to the general public on the KBM website (www.kbm.on.ca).

Based on the audit, 20 recommendations were made. Recommendations can arise from audit team observations of material non-conformances, or may be developed to address situations in which the audit team identifies a significant lack of effectiveness in forest management activities.

The report contains 16 recommendations directed to DFMC and MNR Dryden District under the following guiding principles of the IFA process:

- Public Consultation and Aboriginal Involvement – 2 recommendations
- Forest Management Planning – 2 recommendations
- Plan Assessment and Implementation – 9 recommendations
- Monitoring – 2 recommendations
- Achievement of Management Objectives and Forest Sustainability – 1 recommendation

A total of three recommendations (not including licence extension) are directed to Corporate MNR associated with two of the guiding principles of the IFA process, specifically Forest Management Planning and Monitoring.

Three of the recommendations provided in this report deal with significant concerns. These concerns are described as follows:

1. Beyond the 2011-2021 FMP, Dryden Forest FMPs will rely on outdated FRI for the foreseeable future. Both the MNR and DFMC were concerned that the enhanced FRI schedule may not provide a suitable inventory in line with the forest management planning cycle. If the cycles of inventory (10 years) and planning (10 years as of 2011 for the Dryden Forest) are not synchronized properly, the advances in the enhanced FRI cycle will be of no benefit to the planning process in the Dryden Forest. The Dryden Forest enhanced FRI is scheduled for image acquisition in 2009 and the final product will only become available for planning of the 2021-2031 FMP. Without synchronizing FRI delivery with the ten-year planning cycle, all plans in the future will be using outdated forest inventory data in the planning process. This problem is not isolated to the Dryden Forest.
2. During the development of the 2006-2011 FMP, available FTG data should have been used to aid with the development of the modeling inputs. This would have led the planning team away from the chosen Selected Management Alternative and towards an alternative that could actually achieve the objectives of the FMP. As planning has already started for the 2011-2021 FMP, a recommendation is directed at that plan rather than an amendment to the 2006-2011 FMP.
3. Very little tending was completed during the period under audit. Tending is needed in many renewal areas that were seeded or planted and some naturally regenerating stands to ensure conifer dominance is maintained as per FMP objectives. In the near absence of a competition control program, the Desired Future Forest Condition described in the 2006-2011 FMP will not be achieved. The audit team views the minimal competition control program planned and implemented during the audit term as the most crucial finding of the audit. Competition can and must be controlled in these stands to ensure FMP objectives can be achieved. The audit team sees this concern as critical.

Overall, management of the Dryden Forest is performed well. Staffs of DFMC and MNR have demonstrated a high level of knowledge of the Forest and of forest management. Further supporting this knowledge is the willingness of the staff of both organizations to work cooperatively.

The audit team concludes that, with critical exception noted in point three above, management of the Dryden Forest was in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, the Forest was managed in compliance with the terms and conditions of the Sustainable Forest Licence held by Dryden Forest Management Limited, and forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol. Therefore, the audit team recommends the Minister extend the term of the Sustainable Forest Licence #542444 for a further five years, only upon confirmation that the following condition has been satisfied: DFMC must ensure that all stands operated during the audit term that require or are expected to require competition control be treated by the end of the 2010 growing season.



Peter Higgelke, R.P.F.
Lead Auditor, on behalf of the audit team

2.0 INTRODUCTION

This audit report presents the results of the Independent Forest Audit (IFA) conducted by KBM Forestry Consultants Inc. (KBM) on the Dryden Forest for the five-year period from April 1, 2003 to March 31, 2008. The audit assesses the implementation of the last three years of the 2001-2006 Forest Management Plan (FMP) and the first two years of the 2006-2011 FMP, including its planning process and approval.

The Dryden Forest is managed under Sustainable Forest Licence (SFL) #542444 held by Dryden Forest Management Company Ltd. (DFMC). Throughout this audit report, reference to "the Company" also refers to DFMC. As the managers of the Dryden Forest, the principal auditees are both DFMC and the Dryden District Office of the Ministry of Natural Resources (MNR). Other auditees include shareholders, contractors and other branches of MNR to the extent that forest management activities carried out by them are the subject of audit examination.

2.1 Audit Process

The Independent Forest Audit Process and Protocol (IFAPP) was developed by MNR to provide a comprehensive and consistent method of evaluating forest management activities on Crown land. The IFAPP states that the purpose of an Independent Forest Audit is to:

- a) assess to what extent forest management planning activities comply with the Forest Management Planning Manual (FMPM) and the *Crown Forest Sustainability Act* (CFSA);
- b) assess to what extent forest management activities comply with the CFSA and with the forest management plans, the manuals approved under the CFSA and the applicable guides;
- c) assess the effectiveness of forest management activities in meeting the forest management objectives set out in the forest management plan, as measured in relation to the criteria established for the audit;
- d) compare the forest management activities carried out with those that were planned;
- e) assess the effectiveness of any action plans implemented to remedy shortcomings revealed by a previous IFA;
- f) review and assess a licensee's compliance with the terms and conditions of the forest resource licence.

The IFAPP is based on eight guiding principles (Appendix C) and contains 158 procedures, 132 of which are applicable to the Dryden Forest (the Forest). The audit procedure serves as a framework to provide a structured approach to evaluating whether or not forest management activities meet the requirements governing forestry practices on Crown land in Ontario.

MNR categorized the various IFA procedures based on complexity and their potential impact on forest sustainability. The IFAPP directs the audit team to assess through sampling, per audit principle and associated criteria, the three categories of procedures as follows:

- Administrative procedures – low risk: 20-30%
- Administrative but also having a bearing on sustainable forest management – medium risk: 50-75%
- Procedures directly related to sustainable forest management – high risk: 100%

The lower range of the sample scale may be considered for forests certified in accordance with a sustainable forest management standard accepted by Ontario. At the time of the audit the Dryden Forest did not have such certification. Table 1 summarizes the number of procedures selected by the audit team for audit based on the direction provided by the IFAPP.

Table 1. Number of procedures selected for audit and their associated risk category.

Guiding Principle	Low Risk Procedures			Medium Risk Procedures			High Risk Procedures		
	Applicable	Selected	% Audited	Applicable	Selected	% Audited	Applicable	Selected	% Audited
1. Commitment	0	-	-	2	1	50	0	-	-
2. Public Consultation and Aboriginal Involvement	0	-	-	6	5	83	2	2	100
3. Forest Management Planning	5	2	40	12	10	83	35	35	100
4. Plan Assessment &	1	1	100	1	1	100	9	9	100
5. System Support	0	-	-	1	1	100	1	1	100
6. Monitoring	0	-	-	7	4	57	11	11	100
7. Achievement of Management Objectives and Forest Sustainability	0	-	-	2	1	50	15	15	100
8. Contractual Obligations	0	-	-	4	3	75	18	18	100
Total	6	3		35	26		91	91	

The previous IFA conducted on the Dryden Forest occurred in 2003. Fifteen recommendations arose from that audit and the actions to address the recommendations were examined during the course of this audit (see Section 2.8). The audit process for the Forest consisted of seven components:

1. **Audit Plan:** KBM prepared an audit plan that described the schedule of audit activities, audit team members and their qualifications, audit participants, and auditing methods. The audit plan was submitted to MNR, DFMC, the Forestry Futures Trust Committee, and the Chair of the Dryden Forest Local Citizens Advisory Committee (LCAC). Audit team members and their qualifications are also included in Appendix B of this report.
2. **Public Consultation:** Through individual letters mailed in late July, KBM advised all current Dryden Forest LCAC members that an audit will be taking place and invited their input. LCAC members attended the pre-audit meeting, as well as the closing meeting. An audit team member attended an LCAC meeting in early September to discuss the audit and any concerns the LCAC members might have about the Forest.

Newspaper ads were published in two area newspapers prior to the pre-audit meeting advising the public of the upcoming audit including the *Dryden Observer* and the *Wawatay News*. As per the requirements of the IFAPP, the notices identified the purpose of the audit and invited the public to submit comments to the LCAC Chair or directly to KBM.

KBM also prepared a one page survey to solicit public input to the audit process. The survey, in addition to a general letter informing contacts of the audit, was mailed to businesses and organizations, and a representative sample of one-third of the individuals listed in the Forest Management Plan (FMP) mailing list (as provided by MNR Dryden District). This list includes tourist operators, private land owners, trappers, baitfish licence holders, bear management area holders, local municipalities and government agencies, independent loggers, logging contractors, shareholders and other special interest groups. The survey was also available to the general public on the KBM website (www.kbm.on.ca).

A total of eight responses were received from the public as a result of either the newspaper ads or the survey. A summary of public consultation is presented in Appendix E, which also includes a copy of the survey and newspaper notices.

3. MNR Dryden District provided KBM with contact information for each Aboriginal Community within or adjacent to the Dryden Forest, and/or who participate in activities on the Dryden Forest. A letter was sent out to each of the Aboriginal communities on the contact list inviting them to participate in the IFA of the Dryden Forest. The letter asked for their input and encouraged them to contact KBM if they wish to participate in the audit or if they require more information before making a decision. KBM also offered to arrange in-person meetings with each of these Aboriginal Communities. Follow-up phone calls were made when necessary to encourage a response. A summary of discussions with Aboriginal communities is presented in Appendix E and comments are incorporated in Section 3.2.5 where appropriate.
4. Field Site Selection: The audit team conducted a preliminary site selection prior to meeting with DFMC and MNR staff. Annual Work Schedules (AWSs) and Annual Reports (ARs) were used to ascertain the amount and type of forest operations carried out on the Forest during the audit period. A stratified random sample of sites was then selected to ensure that selected sites were representative of a cross section of all activities conducted on the Forest during the audit period. A pre-audit meeting was held in Dryden on July 29, 2008. Part of the pre-audit site visit was spent working with DFMC and MNR to finalize the preliminary site selection and develop an itinerary for the field portion of the audit.
5. Pre-audit Document Review: Prior to the five-day site visit, the audit team reviewed documents provided by DFMC and MNR, including the:
 - a. Dryden Forest 2001-2006 and 2006-2011 FMPs
 - b. Annual Work Schedules and Annual Reports associated with the above FMPs
 - c. Conclusions of the 1997-2001 Report of Past Forest Operations (RPFO)
 - d. Comparison and Trend Analysis of Planned versus Actual Forest Operations Report (TAR)
 - e. Report of the Independent Forest Audit of the Dryden Forest conducted in 2003
 - f. Action Plan and Status Report on the Action Plan for the 2003 Independent Forest Audit of the Dryden Forest
6. On-Site Audit: The objectives of the field site visits were to confirm that activities were conducted according to plan, that they conformed to provincial laws, regulations, and guidelines, and that they were effective. The opening meeting was held in Dryden on September 7, 2008. During the on-site visit portion of this audit, the audit team conducted interviews with staff of DFMC and MNR, with LCAC members, and with representatives of local Aboriginal communities. The audit team examined documents, records and maps at the DFMC and MNR offices, and spent two days in the field viewing selected sites with representatives of DFMC, MNR District, Region and Forest Management Branch, and a representative of the Forestry Futures Trust Committee (FFTC). Figure 1 presents the locations of the field sites.

Many stops provided the opportunity to audit multiple activities such as harvesting, renewal, values protection, etc. KBM committed to, and surpassed, a minimum of a 10% sampling of key activities and operations conducted on the Forest during the audit period. The 10% minimum sampling intensity is prescribed by the 2008 IFAPP. Table 2 presents the actual sampling intensity for each forestry activity examined on the ground as part of the field site visits. Due to access constraints, the audit team relied on a helicopter to reach the majority of the selected field sites.

The closing meeting was held in Dryden on September 12, 2008. This meeting provided a forum for the audit team to present and discuss preliminary audit findings with DFMC, MNR and members of the LCAC.

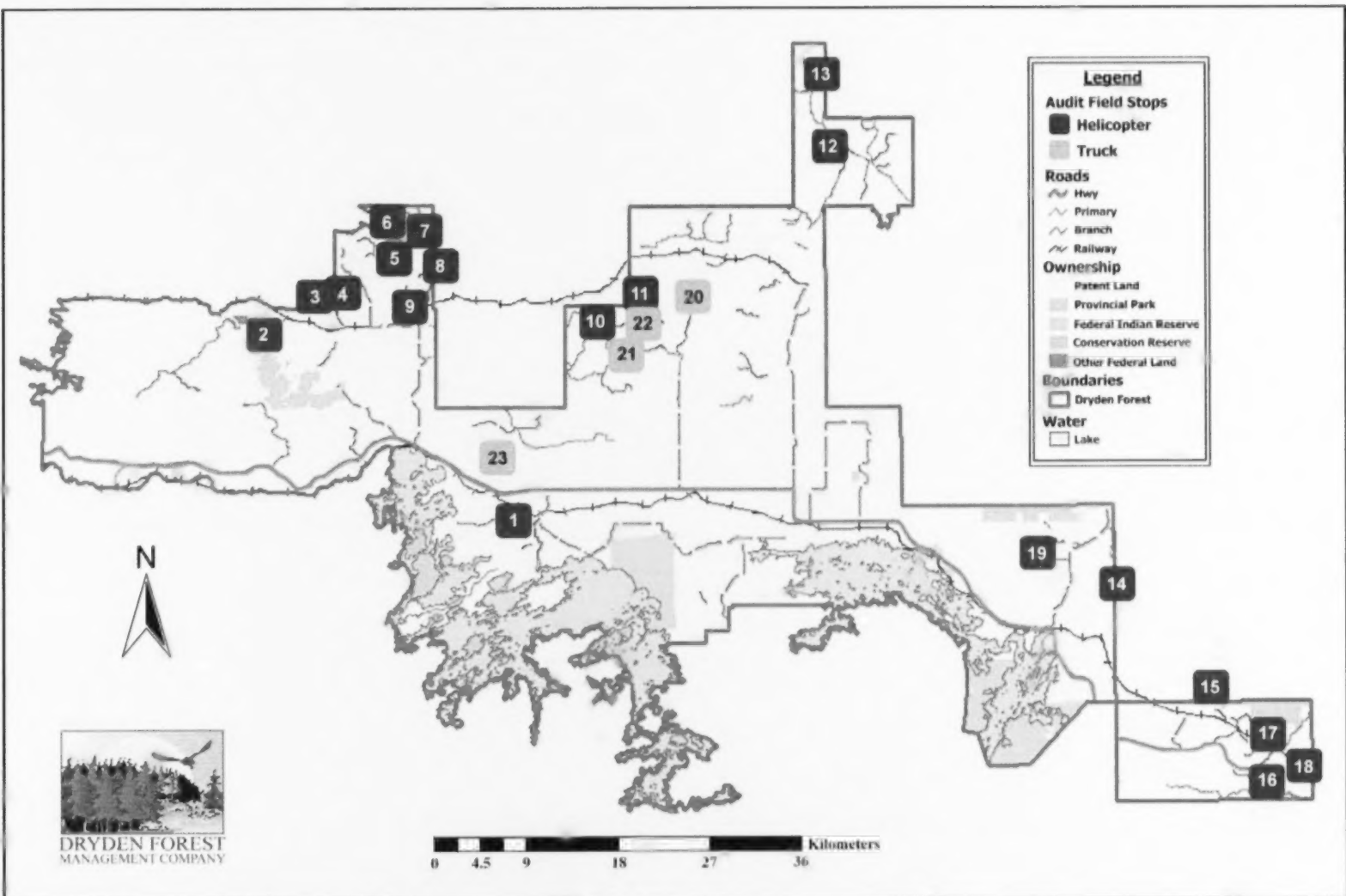


Figure 1. Dryden Forest audit field site locations.

Table 2. Audit sampling intensity for the Dryden Forest.

Activity	Total Area/Number ¹ (2003-2008)	Area/Number Sampled	Percent Sampled
Harvest (ha)	5,579	792	14.2
Renewal & Maintenance (ha)	11,053	1,399	12.7
Free-to-Grow (ha)	3,025	309.25	10.2
Area of Concern Categories ² (#)	42	11	26.0
Road Construction (km)	8.9	3.6	40.4
Road Maintenance (km)	1,130.7	484	42.8
Specified Procedures Review ³ (ha)	1,725	568	32.9

¹ The amount of area for the 2007-2008 year has been estimated from the average annual value of the previous four years.

² Area of Concern categories refer to the different types of AOCs present on the Forest. Examples include riparian reserves, cold water fisheries, eagle nests, etc. More than one AOC was associated with some sites selected for review of harvest and renewal operations.

³ The Specified Procedures Review involved the verification of maps, records, and fieldwork associated with Forest Renewal Trust Account expenditures for 2006-2007.

7. Final Report: The audit results are presented in this report following a brief description of the audit process and the forest licence area under review. Within the report, the audit team has made recommendations to address instances of a non-conformance to a law and/or policy, or an identified lack of effectiveness in forest management activities. Recommendations from this audit must be addressed in an action plan developed by DFMC and MNR District, with input and review by MNR Regional and Forest Management Branch representatives. MNR Regional and Forest Management Branch representatives will also develop an action plan to address any recommendations applicable to matters of forest management within the scope of responsibilities of these departments.

Suggestions are no longer highlighted in audit reports, nor will they be addressed in action plans. Any suggestions of the audit team have been incorporated within the regular text of the report. Best Practices are identified if highly effective or novel approaches to various aspects of forest management are observed on the Forest.

2.2 Forest Management Context

The Dryden Forest operated as a Crown management unit (Dryden Crown Management Unit #535) until June 24, 1998, when the SFL was awarded to Dryden Forest Management Company Limited. At that time, DFMC became responsible for the general administration of the Forest, including responsibilities for planning, reporting and implementing all forest operations. Shareholders of DFMC are traditional Crown management unit operators who continue to operate on the Forest. In addition, there are three Aboriginal community owned/affiliated operators. There are four wood supply commitments outlined in the SFL as well as one special condition that is intended to provide harvesting opportunities on the Dryden Forest to the three local Aboriginal operators based on a percentage of the annual harvest area as calculated in the approved FMP for the Dryden Forest.

2.2.1 Location of the Forest

The Dryden Forest is located in MNR's Northwest Region and is administered by MNR Dryden District (Figure 2). Situated along the Trans Canada Highway, the Forest is well accessed and contains many communities within its boundaries including Dryden, Vermillion Bay, Eagle River, Waldhof, Oxdrift, Dymont, Wabigoon, Dinorwic, Red Lake Road, Eagle Lake First Nation and Wabigoon Lake Ojibway Nation. Along the north, east and southern edges of the Forest it borders the Wabigoon Forest, under licence to Domtar, while the northwest part of the Forest shares a border with the Whiskey Jack Forest.

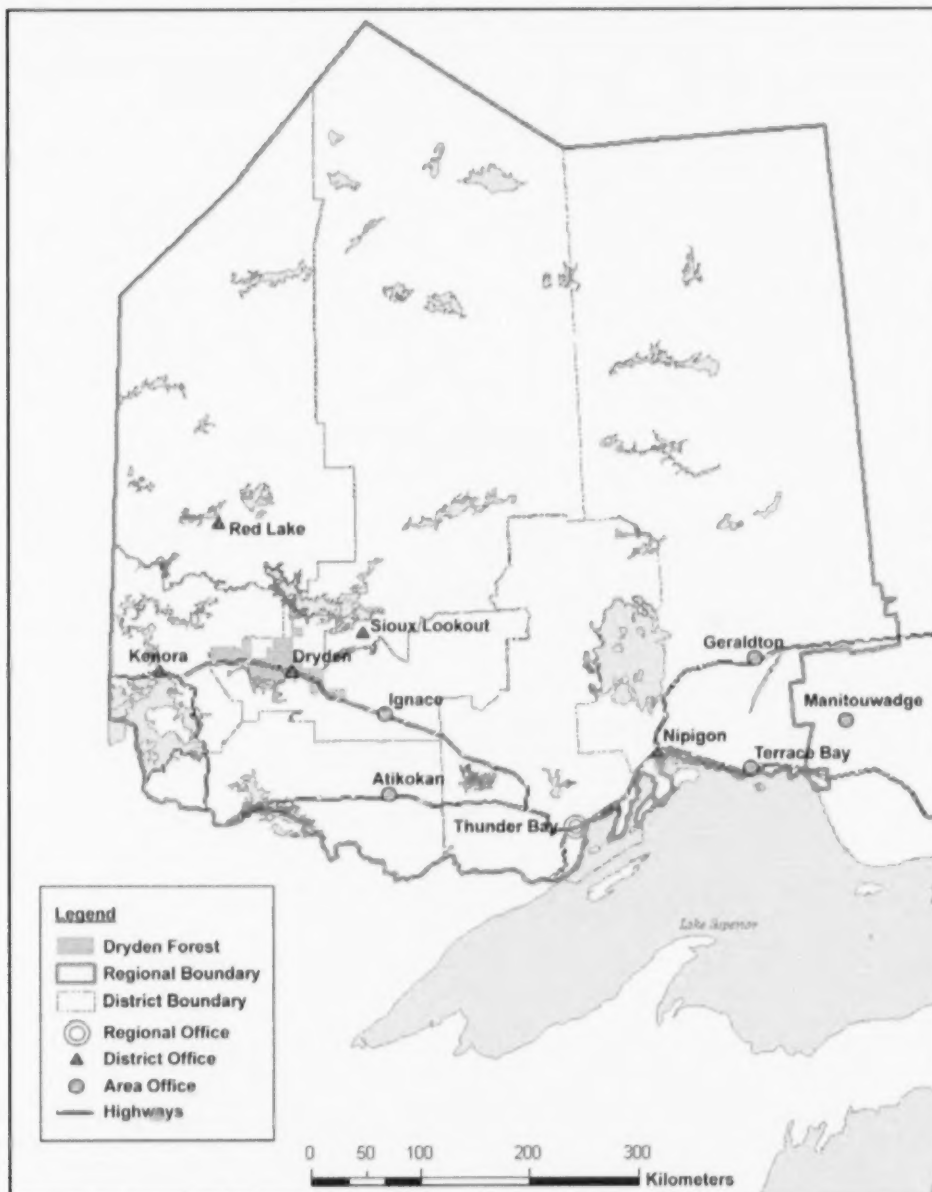


Figure 2. Location of the Dryden Forest within the MNR district and regional setting.

2.2.2 Description of the Forest

The following description of the Forest is based primarily on material included in the 2006-2011 FMP for the Dryden Forest.

The Dryden Forest lies within the Boreal Forest Region and is dominated by jack pine, poplar, and black spruce. A small portion in the south is a transition zone between the Boreal Forest and the Great Lakes-St. Lawrence Forest Regions. Jack pine is the largest working group, followed by black spruce, then poplar. Several other working groups account for less than 5% of the production forest area. Pockets of red pine and white pine occur, and to a limited extent, eastern white cedar and tamarack. The Forest covers the Crown lands immediately surrounding the city of Dryden.

Sand and clay are the two main soil types that characterize the Forest. Clay soils are a significant consideration in forestry operations because when wet, clay soils are vulnerable to compaction. On clay sites located in the central portion of the Forest, mixed woods stands of trembling aspen, balsam fir, white birch, spruce and pine are common. On upland sand flats in the central portion of the Forest, jack pine stands are predominant, and usually originated from wild fire. On low-lying sites throughout the Forest, black spruce stands are usually evident while other fresh sites support pockets of cedar trees. Well-drained sites with coarse soils, such as moraines and bedrock ridges, often support jack pine and occasional stands of white pine and red pine.

The provincially featured wildlife species used in the planning process for the 2006-2011 FMP were the marten, moose (foraging and winter) and deer (foraging and winter). In addition 17 additional species were selected regionally in order that the estimated habitat for a standard array of wildlife species may be tracked.

Total area of the Dryden Forest encompasses approximately 307,107 ha of which 204,575 ha (67%) is Crown Managed Area (including water). Forests account for 66% of the Crown managed area and water makes up 32% of the area, with other land types accounting for the remaining 2%. This reflects the many lakes and rivers that are present within the Dryden Forest. Approximately 84,800 ha of patent land are included in the Dryden Forest which must be considered during the forest management planning process. Patent lands can create operational constraints on forest management planning and have implications on management strategies such as managing for landscape patterns. Provincial parks and conservation reserves comprise 3.3% of the productive forest land base of the Dryden Forest. There are five Provincial Parks located entirely or partially within the SFL boundaries. Federal land covers 8,343 ha on the Dryden Forest which includes two First nation reserves and a parcel of federal owned land by Forest Lake. Unmanaged areas are Crown lands excluded from forest management and account for 1.8% of the total area. Areas coded as unmanaged include Conservation Reserves that are the result of the Ontario Living Legacy Process.

In addition to the Trans Canada Highway, other secondary highways, Local Road Board roads, and primary and secondary forest access roads contribute to an extensive network of access routes throughout the Dryden Forest.

2.2.3 Forest Management Issues

The IFAPP requires the identification of high priority aspects (HPAs) of the auditees' systems or activities that will be reviewed. HPAs can include significant management challenges that are inherent to the Forest or can be specific issues that have arisen during forest management planning or plan implementation. The audit team discussed with the auditees the identification of HPAs for consideration during the audit. The HPAs are as follows:

1. Differences in opinion between DFMC and MNR over the allotment of roads funding in cases where roads provide immediate access to harvest blocks near highways.
2. Scheduling of new forest inventory as it relates to the preparation of future forest management plans.
3. The amount and distribution of private lands within the Dryden Forest and the impact on FMP "spatial" objectives, and access to Crown forested land.
4. The decline in the use of herbicide treatments and its impact on conifer renewal.
5. Difficulties in meeting the FMP objective target of increasing the PJ1 forest unit area over time to follow the trend of the natural benchmark due to insufficient herbicide applications and mortality to jack pine renewal caused by deer browsing.
6. Insufficient allocation of resources to the Dryden District MNR to meet FMPM obligations.

The audit team considered the HPAs during the conduct of the audit.

3.0 SUMMARY OF AUDIT FINDINGS

3.1 Commitment

An organization's policy acts as an important guide, providing a basis for making decisions in a consistent and reasoned manner. Policies help to ensure that decisions and actions undertaken by staff are related to the goals and objectives contained in the organization's policy. DFMC and MNR have policy statements outlining their respective commitments to sustainable forest management.

DFMC's "Sustainable Forest Management Policy" makes a commitment to "...managing the Dryden Forest sustainably through the integration of environmental, economic and social values." It includes the following action statements:

- Operating in accordance with all relevant federal, provincial and municipal legislation and regulations, and all relevant standards and guidelines
- Communicating this sustainable forest management policy to all shareholders, and company contractors
- Implementing and maintaining this sustainable forest management policy (General Manager)
- Continuously improving forest management practices on the Dryden Forest to sustain environmental quality and to enhance the social and economic value of the Dryden Forest
- Monitoring environmental impacts through compliance and effectiveness audits and regular communications with shareholders and contractors

MNR's commitment is described in *Policy Framework for Sustainable Forests*¹ and *Our Sustainable Future*². Direction is provided towards stewardship of Ontario's forests, sustainable forest management, biodiversity conservation and sustainable development.

Discussions held with staff during the site visit indicated staff awareness of organizational policy commitments. Interviews conducted during the site visit indicated that staff members were committed to the direction described in their respective organizational policies and demonstrated a commitment to adhere to the rules and regulations governing forest management activities. The auditors saw evidence of a good working relationship between the staff of DFMC and MNR.

3.2 Public Consultation and Aboriginal Involvement

3.2.1 Local Citizens' Committee

The Dryden Local Citizens' Advisory Committee (LCAC) is a standing committee that assists in the preparation and implementation of forest management plans for the both the Dryden Forest and the Wabigoon Forest. Only the LCAC's activities associated with the Dryden Forest fall within the scope of this audit.

LCAC membership was reviewed by MNR in the spring of 2003 in anticipation of the upcoming planning process for the 2006-2011 FMP. In November 2004, membership again was reviewed against the requirements of the 2004 FMPM. The current LCAC membership was reviewed and found to include a number of local citizens representing a range and balance of interests from the local communities within the Dryden Forest. The LCAC has struggled with the ability to successfully recruit Aboriginal representatives although invitations have been sent to local Aboriginal communities. A seat has been set aside for that purpose.

The range and balance of interests represented on the LCAC is not determined in the traditional manner however, it is deemed to still meet the intent of Section 3.2.3 of the 2004 FMPM. An *LCAC Profile* is used

¹ MNR. 1994. *Policy Framework for Sustainable Forests*. 5 pp.

² MNR. 2005. *Our Sustainable Future*. 21 pp.

to represent the sum of the LCAC members' collective resource knowledge and experience; employment and resource-user contacts; and relevant interpersonal skills and training. Each LCAC member completes a detailed member profile, and these member profiles are combined to create the LCAC's collective profile. Areas of expertise or experience where the current LCAC is weakest are targeted when recruiting new members. The LCAC profile is monitored annually and maintained in the terms of reference. This is an innovative approach to maintaining an LCAC membership with a broad base of resource knowledge and experience representing various interest groups. It appears to be particularly effective on this Forest which is relatively small and has a relatively lower population density than other forests in the province, which can make it difficult to maintain a balanced LCAC membership when members are selected based on a single interest or affiliation.

The LCAC terms of reference was reviewed and updated at the beginning of the 2006-2011 FMP planning process (September, 2003) as required. An amended terms of reference that was updated to meet the 2004 FMPM requirements was accepted by the LCAC in October, 2004. The most current (at the time of the audit) LCAC terms of reference dated February 13, 2008, was reviewed for content and completeness against the 2004 FMPM. It is a very comprehensive document however, it did not include the date of appointment to the committee of some members, nor did it identify background material and training required to assist committee members with their roles and responsibilities and forest management planning matters. Some members recounted how overwhelmed they felt at the onset of their membership. If background material and training options available to new members are spelled out in the terms of reference, it could serve as a reference point of support for new members.

Recommendation 1: District MNR must ensure that the LCAC terms of reference meets the content requirements of the 2004 FMPM, specifically dates of member's appointment and background material and training required to assist committee members with their roles and responsibilities and forest management planning matters.

A member of the audit team met with current members of the LCAC at their September, 2008 meeting. Current members who were present during the development of the 2006-2011 FMP indicated that they felt very engaged in the process. The committee as a whole agreed that MNR and DFMC have kept the LCAC well informed and involved in the Dryden Forest throughout the audit term and that members of the LCAC speak their opinions openly.

MNR presents the AWS annually to the committee and brings proposed amendments to the LCAC for input on categorization. During the planning process, MNR brought "Dryden FMP Updates" to the LCAC meetings to supplement the updates provided by the LCAC representative on the planning team. When appropriate, issues raised by the public are brought to the LCAC by MNR for input and/or endorsement of a proposed solution. Annual reports are presented to the committee by DFMC annually. A review of LCAC meeting minutes confirms these findings. This sharing of responsibilities is indicative of the good working relationship that exists between DFMC and MNR District and was recognized by the LCAC.

The LCAC members also had some suggestions for improving the LCAC experience. They would like to see more field excursions and opportunities to "job shadow" MNR and/or DFMC staff in the field. This could be implemented on an ad hoc basis. The intent would be for LCAC members to get some experience about how the forest is managed on a day-to-day basis. A second comment was in regards to an LCAC gathering that was held a few years ago that brought together LCACs from northwestern Ontario for workshops and to exchange ideas. Current members who attended this function described it as an invaluable experience and would like to see more opportunities like this to network with members of other LCACs in the region. The audit team feels that local, regional, and provincial levels of MNR should sincerely consider these suggestions, keeping in mind that the LCAC is made up of volunteers from the local community who have chosen to participate in what can be an intimidating process if one is not already familiar with forest management planning in Ontario.

The previous audit commented on the limited involvement of the LCAC in the 2001-2006 FMP and the need for more direct participation in the identification and analysis of management alternatives. The planning team made efforts to increase engagement of the LCAC in the identification and analysis of management alternatives for the 2006-2011 FMP. A joint LCAC-planning team meeting was held on December 9, 2004 to present the Dryden Forest Natural Benchmark and the planning team's analysis, to discuss the challenges faced in forest management modeling in general, and to answer LCAC questions and solicit member's input with regard to future modeling. LCAC members were also invited to sit in and participate in any of the modeling sessions.

On February 16, 2005, the LCAC and planning team held another joint meeting to discuss progress in developing a selected management alternative. LCAC members commented favourably on the planning team's efforts to demonstrate the process leading to the management alternatives. The planning team and LCAC members are commended for their efforts.

3.2.2 FMP Standard Public Consultation Process

The 2006-2011 FMP was prepared following the requirements of the 1996 FMPM, including the public consultation process. Consultation documentation was reviewed at the MNR office in Dryden and interviews were held with MNR and DFMC staff. MNR published the formal public notice in two newspapers at every required stage of the process. In advance of each information centre, MNR placed an additional informal ad in the same publications. Direct written notices were mailed to contacts on the Dryden District FMP mailing list at required stages. At Stage 3, MNR also mailed 55 letters with maps showing proposed operations to adjacent landowners. Timelines associated with public consultation requirements were adhered to in the majority of cases. The notice of the 2nd information centre was published in the *Wawatay News* only 20 days in advance (versus the required 30 days) and based on the stated deadline for comments, only allowed for a comment period of 80 days (versus the required 90 days). This is considered a minor variance due to the bi-weekly publication schedule of the *Wawatay News* and the process of approvals required within MNR to purchase advertising space. Therefore a recommendation is not warranted.

In general, the public consultation process was well documented; however, there is room for improvement. Specifically, the public consultation record was not clear on the availability of all required reports and maps at the 1st and 2nd information centres, even though MNR dedicated a binder to each information center and took photographs of the displays. Condition 28(b) of *MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario* requires that "independent forest audits include an assessment of compliance with the forest management planning process..." Documentation must be able to clearly demonstrate to the auditors that FMPM requirements are being met.

Recommendation 2: District MNR must ensure that documentation and records of public information centres clearly demonstrate that the information made available to the public meets FMPM requirements.

Communication between DFMC and MNR regarding public comments received during the planning process was effective. Most of the issues raised were resolved directly by the plan author in cooperation with the concerned individual. When warranted, DFMC met with concerned citizens to discuss issues and possible solutions. Members of the planning team made themselves available to answer questions from the public at information centres and recorded the communication. MNR was also actively involved in responding to comments received from the public.

In addition to a public consultation binder, the MNR Area Forester maintained a public consultation summary matrix to track issues and comments. This method helped to ensure that each concern was acknowledged and followed up until a solution was reached. It also allowed MNR to highlight concerns that had the potential to go to the formal issue resolution stage. DFMC provided MNR with

documentation of public comments it received and the associated responses for inclusion in the public consultation binder and summary matrix.

This system worked well during the 2006-2011 FMP planning process; MNR was able to review the matrix prior to the public review of the draft plan and contact respondents where it was not clear whether their concern(s) were resolved to their satisfaction. Through letters dated October 3, 2008, MNR contacted nine individuals to confirm whether or not issues were resolved satisfactorily and describe the issue resolution option available to them. Six responses were received: one individual's concerns had been addressed to their satisfaction; three individual's concerns had not been addressed to their satisfaction, but they did not choose to pursue the Issue Resolution process; and, two individual's concerns had not been addressed to their satisfaction and they both wrote the District Manager seeking Issue Resolution. Issue resolution is discussed in more detail in the next section.

There was some concern expressed on the Dryden Forest whether elements of the current FMP public consultation process are effective means of engaging the public based on a perception that too many issues are raised by the public late in the planning process (i.e. at or after draft plan review stage and after the plan is approved). Are public notices effective in capturing the public's attention, are mail outs being read or are these mechanisms being overlooked by a public overwhelmed with information overload? Is the low turnout at public information centres an indication of the inconvenience of the practice? Or is it simply human nature to speak up only when an unwanted activity is proposed in or adjacent to "my backyard"? All of the above may be at play to some degree and forest managers need to keep in mind that no public consultation process will be completely engaging. Nevertheless, how people communicate and how much information people are exposed to on a daily basis has changed immensely within the past decade. It would be timely of MNR to re-consider its current process of public notification under the forest management planning system. Consideration should be given to improving the appearance of public notices, timing and location of information centres, and the means of circulating information to the public, with more emphasis on electronic applications such as websites operated by local media, MNR's provincial website (e.g. a regularly updated section devoted to ongoing forest management planning processes), email, etc.

The audit team also reviewed the public consultation process implemented for amendments processed during the audit period. FMP amendments categorized as either minor or major amendments require some level of public consultation to occur. There was one minor amendment to the 2001-2006 FMP during the audit term. Amendment #25 was requested to allow for a salvage cut to occur in response to a blowdown event that occurred on June 23, 2005. The LCAC recommended categorizing the amendment as "administrative" with a requirement for public notice at the September 12, 2005 meeting. The amendment was upgraded to "minor" by the District Manager to initiate a formal public consultation process.

There were eight amendment requests to the 2006-2011 FMP during the audit period (one was not accepted). All amendment requests were identified as administrative amendments but two were upgraded to minor amendments by the District Manager (add insular and peninsular residual areas; construction of a primary forest access road along an old local roads board trail).

Minor amendments require that one formal opportunity must be provided for public consultation. The public consultation opportunities were reviewed against the requirements of the 2004 FMPM and found to be compliant. In each case, a public notice was published in two local area newspapers and direct written notices, including a map, were mailed to affected stakeholders as determined by MNR. This included individuals and organizations that are known to be directly affected by or have an interest in the operations proposed in the minor amendment, specifically adjacent landowners and registered resource users such as trappers, baitfish licence holders, and holders of bear management areas. The required timeframe for comment was provided.

There are no formal public consultation requirements for the preparation of an administrative amendment. However, for any administrative amendments that are spatial in nature, MNR identifies registered resource users who may be affected by the proposed administrative amendment and notifies them in writing. For example, amendment #6 to the 2006-2011 FMP that was categorized administrative involved changing a block configuration to provide some protection to a previously unidentified trail system. MNR mailed written letters to trappers, baitfish licence holders, a BMA holder, and residents near the area, in addition to identified trail users, notifying them of the amendment. This exceeds the requirements of the 2004 FMPM but was implemented in response to a request by the LCAC. The basis for the request is outlined in Appendix 6 of the LCAC terms of reference. When an administrative amendment is being proposed that has spatial components and affects specific areas, the LCAC can recommend that known resource users located in a proposed amendment area and anyone else who made a comment regarding the amendment area or subject matter during plan development be contacted to inform them of the change to the plan (e.g. baitfish operator, BMA operator, trapper and/or Tourist operator).

3.2.3 Issue Resolution

After reviewing the public consultation record MNR followed up with individuals during the 2006-2011 draft plan review stage when it was not clear whether their issues were resolved to their satisfaction. This communication included a letter describing the process and timelines associated with the option to pursue issue resolution.

As a result of that review, two unresolved issues were brought forward to the District Manager for issue resolution. A third request was received just prior to the end of the public review and comment period of the draft plan. In each instance, the request for issue resolution was initiated after the effective date of the 2004 FMPM; therefore, it was against this manual that the process was reviewed. All three were also affected by approved operations in the 2001-2006 FMP that was in effect at the time.

Two of the three issues were resolved satisfactorily to all parties. One involved a tourist lodge owner's concerns with the proposed timing of slash pile burning during the deer hunting season; DFMC agreed to avoid the deer hunting season when conducting slash pile burns in the area. The other involved a private landowner's concerns over a block adjacent to his property that was allocated for harvest; after a site visit with the District Manager, the matter was deemed to be resolved. In each case, the District Manager arranged and attended meetings and/or site visits with the proponent and plan author in a timely manner.

The third issue involved a private landowner's concerns with proposed plans to access harvest allocations adjacent to their property and to permit hauling on a public road that runs through their property in close proximity to their residence. DFMC made a sincere effort to investigate other access options but none were deemed feasible. DFMC offered to impose timing restrictions on the operations and strict speed limits on log trucks during the haul. Due to the proponents previous relationship with MNR the matter was deemed to be sensitive in nature. In the end, for unrelated reasons, the individual relocated and sold the property.

3.2.4 Individual Environmental Assessments

There were no requests to the Minister of the Environment for an individual environmental assessment under the *Environmental Assessment Act*. The timeframe in which a request for an individual environmental assessment can be made is the 30-day period for public inspection of the MNR-approved FMP.

During the inspection of the approved FMP the following issue was resolved without a formal request for an individual environmental assessment. A local group of mountain bikers brought their concerns to MNR regarding an approved harvest block located in an area of the Forest where they had been maintaining

and using bike trails. A petition-style form letter was distributed to permanent and seasonal residences near the area and approximately 20 of these letters were received by MNR, with additional concerns regarding haul trucks using Thunder Lake Road, a paved access road to lakefront properties. The mountain biking group was advised to affiliate themselves with a recognized mountain biking club to meet MNR definition of a recreation club. The District Manager met with the proponents to discuss the situation and this led to a commitment to address protection of the Thunder Lake Trail System through an administrative amendment to the 2006-2011 FMP prior to any operations occurring. MNR facilitated the consultation while DFMC and the mountain biking club agreed to attempt a resolution. It was agreed that harvest operations would occur with changes to the block layout and size to allow for a buffer (new Area of Concern (AOC)) around the trail, with contingency area identified to account for the reduced block size. Following a site visit, Thunder Lake Road proved to be unsuitable for logging trucks to navigate and DFMC agreed to use an alternate route through the neighbouring Wabigoon Forest to access the block. The amendment (#6) was requested on March 9, 2007 and approved on May 20, 2007.

3.2.5 Aboriginal Involvement in Forest Management Planning

The MNR has the lead responsibility for Native Consultation in the planning process, as it is termed in the 1996 FMPM. All communication regarding forest management planning with individual Native Communities was documented in the consultation records of the Dryden Forest 2006-2011 FMP. Native consultation began on June 7, 2004, with MNR mailing an *Invitation to Participate* letter to the Chiefs of Wabigoon Lake Ojibway Nation and Eagle Lake First Nation and the President of the Aboriginal Peoples of Wabigoon. As a follow-up to the letter, MNR met with representatives of each community over the summer.

Despite the efforts described later in this section, no Aboriginal communities opted to participate in the Native Consultation process, nor were any new Aboriginal values identified. Nonetheless, as part of the District FMP mailing list, each community did receive public consultation notices at every stage of the 2006-2011 FMP planning process.

The Native Background Information Report was prepared by MNR without any Aboriginal participation. MNR drew heavily on the native background information reports previously prepared for adjacent forests. Documentation and discussions with the MNR Area Supervisor indicated that MNR provided a copy of the draft Native Background Information Report to each community in February and March of 2005 and that no comments were received. As noted in the report, without Aboriginal participation, the document only reflects an MNR perspective.

In conclusion, MNR met the Aboriginal consultation requirements of the FMPM.

There are two First Nation communities located on the Dryden Forest: Wabigoon Lake Ojibway Nation (Waabigoniw Saaga'iganiw Anishinaabeg) and Eagle Lake First Nation (Migis Sahgaigan). Wabigoon Lake Ojibway Nation is located immediately adjacent to the south-eastern boundary of the Forest while Eagle Lake First Nation is located in the south-central portion of the Dryden Forest.

The First Nation community of Grassy Narrows (Asubpeeschoseewagunk Netum Anishinabek) is considered to be adjacent to the Dryden Forest. The community is located significantly west of the Dryden Forest, but does have interest in federally-owned land on the Dryden Forest (that was to be transferred to the community) near Forest Lake. Forest Lake is the site of a former residential school, as well as the proposed site of a First Nation healing centre.

Grassy Narrows First Nation did not participate in the forest management planning process for the Dryden Forest 2006-2011 FMP. Early in the planning process, the MNR planning team Co-Chair was advised that all proposed FMP communications with Grassy Narrows First Nation was to be vetted through an MNR negotiator, who was sitting with representatives of Grassy Narrows First Nation at a

provincial forestry-negotiations table, regarding the neighbouring Whiskey Jack Forest. The reason behind the request was to ensure that FMP consultation did not distract the negotiations. MNR was also advised that the 2006-2011 FMP planning team should continue to send all FMP communications to any people on the MNR mailing list that may be members of Grassy Narrows First Nation. Dryden District MNR implemented the advice given.

Three other First Nations communities are located in proximity to the Dryden District, but are not located close enough to be considered adjacent to the Dryden Forest including Wabauskang First Nation, Whitefish Bay First Nation, and Lac Seul First Nation.

There is also a self-defined Metis community located on the Dryden Forest at the village of Wabigoon. Some members of this community belong to an organization called the Aboriginal Peoples of Wabigoon.

Aboriginal Peoples of Wabigoon

After repeated attempts by MNR to contact the Aboriginal Peoples of Wabigoon, the President of the community group and MNR met on August 26, 2004 to discuss the 2006-2011 FMP planning process. Initially the community indicated some interest in participating in the planning process, but confirmation was never received by MNR. Throughout the fall of 2004, MNR contacted the president on a number of occasions regarding licensing issues and inquired about the community's interest in the 2006-2011 FMP planning process. A clear response was not received. On January 21, 2005, MNR sent a letter to the president of the community notifying him that the second stage (1st information centre) of the planning process had begun and to confirm the community's interest in participating in the planning process for the 2006-2011 FMP; no response was received. The audit team unsuccessfully attempted to contact the Aboriginal Peoples of Wabigoon. A letter was mailed to the President's attention in July, and repeated phone calls were made in late August and while the audit team was on-site in early September.

Wabigoon Lake Ojibway Nation

Representatives of Wabigoon Lake Ojibway Nation and MNR met on July 15, 2004. Initially the Community agreed to meet and identify its interests, concerns and priorities with regard to the Dryden Forest FMP. The community representatives also indicated they wanted to participate in the preparation of the Native Background Information Report and participate in the Forest Management Native Consultation Program. MNR received a letter from Wabigoon Lake Ojibway Nation in September, 2004, that provided a summary of the Community's forestry projects and concerns they wished to negotiate such as securing harvest rights or a wood supply from the District forests and assistance, including financial, from MNR to further develop the projects. MNR did not officially respond to that letter until January, 2005. The delay was due to the length of time it took to get all the MNR staff together who could review the various initiatives mentioned in the letter. Although there was some ongoing communication between the two parties, MNR did not receive a response from the community regarding their interest in participating in the planning process for the 2006-2011 FMP.

An audit team member spoke briefly with a councillor of the Wabigoon Lake Ojibway Nation. The representative was very cautious about what was said during the discussion. The community was about to meet for a strategy building session over the coming days. However, the conversation did identify some general concerns. There is still a common level of distrust or discomfort among community members with regards to MNR, much of which can be attributed to past conflicts with conservation officers. There is also frustration among the leadership who feel that open dialogue with MNR is not occurring. They prefer dialogue to occur directly with the District Manager, rather than MNR staff members. The situation in general has also become somewhat unsettled as a result of events that transpired with respect to the neighbouring Wabigoon Forest.

Wabigoon Lake Ojibway Nation and Eagle Lake First Nation are currently partners, along with Pikangikum First Nation, and a private enterprise based in Finland, on a project to establish a new post and beam

facility in northwestern Ontario. The group, incorporated as Two Feathers Forest Products, LP, is being led by Wabigoon Lake Ojibway Nation. Other partners involved include the City of Dryden, the Municipality of Red Lake, and many government agencies. The project is reported to be in its final planning stages with two sites projected to see development: one in the community of Red Lake and another on Eagle Lake First Nation reserve land. Wabigoon Lake Ojibway Nation had run into stumbling blocks earlier in the process in trying to acquire property suitable for the project closer to the community. MNR Dryden District Area Supervisor had attempted to help by identifying potentially suitable and available parcels of Crown land for consideration, but this did not pan out. In addition to the land made available by Eagle Lake First Nation, Two Feathers, the Municipality of Red Lake, and Goldcorp, a mining company operating in Red Lake, ended up forming a partnership for the procurement of 142 ha of land necessary for this project in Red Lake. This was groundbreaking in itself, as it was unheard of for mining companies to divest property, particularly in Red Lake.

Eagle Lake First Nation

Following a number of phone calls and conversations initiated by MNR Dryden District, the MNR Area Supervisor met with representatives of Eagle Lake First Nation on August 30, 2004, with regards to the *Invitation to Participate*. At the time the community was in the midst of an election which precluded the leadership from initially responding. The MNR Area Supervisor and an Eagle Lake First Nation representative spoke on a few more occasions regarding various concerns and requests for assistance separate from the 2006-2011 FMP planning process. In October, 2004 the community representative indicated that the community would not participate further in the planning process. On January 21, 2005, MNR sent an additional letter to Eagle Lake First Nation notifying them that the second stage (1st information centre) of the planning process had begun and to confirm the community's interest in the planning process for the 2006-2011 FMP; no response was received.

A member of the audit team met with three band councillors of Eagle Lake First Nation during the week of the audit site visit. They discussed the connection to the land that many community members still have, and how working with the land is an important part of their culture. They spoke of the days when community members held small District Cutting Licenses that they worked in the winter, while fishing, blueberry picking and wild rice harvesting were done over the spring and summer, and hunting and brush cutting work was done in the fall. This part of the culture is increasingly difficult to maintain as a way of life.

The Community took the advice of its elders and did not provide any specific values information to MNR. The values identification process is viewed as a one-time exercise which, once completed, essentially hands over free reign to MNR. The MNR Area Supervisor discussed values, and how MNR addresses sensitive values information and confidentiality with Eagle Lake First Nation representatives at a meeting in August, 2004. MNR should continue to provide information about its values identification and protection policies to Eagle Lake First Nation representatives. Eagle Lake First Nation members reported no instances of values being disturbed by forest management activities during the audit term.

Eagle Lake First Nation holds an overlapping license on the Dryden Forest to harvest 4.37% of the available harvest area, which amounts to approximately 6,900 m³ annually. Eagle Lake had hoped to provide an opportunity to a community member to take on the allocation. To encourage interest from serious proponents, the community member was required to assume part of the risk associated with establishing and running a forestry operation. However, the allocation was not enough for an individual to secure the necessary financing to cover operating costs. Council did not want to subcontract the opportunity outside of the community, but mounting management fees and other related debt are forcing them to reconsider that decision. DFMC had been in contact with Council to encourage them to harvest the current allocation before the end of the plan period (2011).

The community also spoke of concerns about the quality of the blocks it was being allocated; specifically that the blocks were inferior (in quality and operability) to those allocated to shareholders of DFMC. The

Company disagrees with this claim and attempted to alleviate the concern through discussions with community representatives when the issue was first raised during implementation of the 2001-2006 FMP. During those discussions, Eagle Lake First Nation indicated preference for harvest opportunities close to their reserve, even though DFMC explained that the area did not have many high-quality stands of timber.

In the 2006-2011 FMP, DFMC allocated four harvest blocks close to the reserve and four harvest blocks near Eagle River (10-15 km from the reserve). The average planned volume for Eagle Lake First Nation was 113 m³/ha., which is slightly lower than DFMC's average planned volume of 120 m³/ha. DFMC was able to meet the request to allocate harvest blocks near the reserve. However, due to the condition of the Forest in that area is unable to match or exceed the average planned volume of the DFMC shareholders. Eagle Lake First Nation has been provided this rational but still feels strongly enough to maintain its position. As an Overlapping Licensee running a small operation that receives an area-based allotment, there is not a lot of volume in the total allocation to buffer the impacts of a low-quality block on the overall operation. The community representative did compliment DFMC in its efforts to work in cooperation with the community, particularly the General Manager. The audit team encourages DFMC to maintain this open dialogue with the community including the rational used in the process of allocating blocks.

3.2.6 Annual Operations Public Inspection and/or Consultation

Based on the results of the procedure sampling process, the procedure associated with this criterion was not audited.

3.3 Forest Management Planning

The 2006-2011 FMP for the Dryden Forest showed a marked improvement over the 2001-2006 FMP that was subject to considerable criticism in the 2003 IFA. The 2001-2006 FMP was fast tracked to be completed one year ahead of the original five-year schedule as a result of court challenges to a series of plans produced under the 1996 FMPM. The 1997-2002 FMP for the Dryden Forest had been originally scheduled for renewal in 2002, but the early renewal date caused several problems. The new schedule did not allow for the use of a more current Forest Resources Inventory (FRI) based upon 1997 aerial photography.

The 2006-2011 FMP did not have these same issues. The plan is well written, and meets or exceeds FMPM requirements with some thoughtful analyses and supporting documentation. The planning team did a commendable job. Several areas are examined in greater detail in the following subsections. The 2006-2011 FMP was produced under the 1996 FMPM, and therefore assessed against the requirements of that manual.

3.3.1 Plan Author, Planning Team, Chair and Advisor Activities

The plan author and both co-chairs of the planning team were registered professional foresters during the planning process for the 2006-2011 FMP and the full audit period. Their registration was confirmed by the Ontario Professional Foresters Association.

The planning team was composed of a sufficient representation of professionals to address all planning requirements of the 1996 FMPM. DFMC was represented by its General Manager and a company forester; MNR was represented by an area supervisor, forester, biologist, and forest analyst; and the LCAC also had a member participate on the planning team. In addition, both DFMC and District MNR each had a local support team available to them. Finally, an extensive list of individuals was available to serve as plan advisors from MNR Region, Science, and Forest Management Branch, as well as other related government ministries.

The terms of reference was approved by the District Manager and Regional Director prior to the issuance of the first public notice of the formal public consultation process as required by the FMPM. The plan development and the roles of individuals followed the terms of reference although there were changes to some of the membership and the timelines. These changes are fairly common to forest planning in Ontario.

A key success factor in developing the 2006-2011 FMP was that the principal planning team members all had worked together on the previous plan and there was no turnover among this core group. In addition, this small core group completed most of the tasks without delegation to a large array of task groups.

The most significant change in the 2006-2011 FMP compared to the previous plan was an increased role for MNR in developing management alternatives and conducting analyses of these alternatives using the Strategic Forest Management Model (SFMM). These had been the responsibility of the SFL holder.

According to the supplemental documentation on planning issues and interviews conducted by the audit team, this new arrangement was considered to be effective in improving the transparency of the process and ensuring that the whole planning team was "on side" with how the model was developed and applied. This process came at the expense of some efficiency and timeliness. As a result, the planning team had to delay the 1st information center from September, 2004 to January, 2005.

The MNR staff also contributed to several sections of the plan related to the forest environment and wildlife habitat. These contributions improved the plan significantly.

3.3.2 Introduction

In the introduction to the 2006-2011 FMP, the Statement of Environmental Values (SEV) briefing note, arising from requirements under the Environmental Bill of Rights, was referenced. MNR has developed seven questions to assist planning teams in addressing the requirement for an SEV briefing note within the FMP (e.g. *How does the proposal seek to complement or further the achievement of the Ministry's goals and objectives?*). The briefing note cited direction provided in MNR's *Beyond 2000* document and stated that the FMP was intended to reflect those directions and "...to further the objectives of managing our resources to achieve ecosystem sustainability." The SEV briefing note is contained in appendices to the FMP.

3.3.3 Management Unit Description

The description of the Dryden Forest is quite thorough and meets the FMPM requirements. The details of the physical environment and forest condition provide useful context for planning and IFAs.

Most of the forest condition and affiliated habitat assessments rely upon the FRI. The FRI system, developed in the 1960s, is based upon the interpretation of aerial photography. The maps developed using this system has proven sufficient to identify where operations are most likely to occur and significant habitat areas of interest such as marten core areas. The estimates for individual stands or blocks may vary significantly between interpreters and/or actual field conditions. However, these errors tend to cancel themselves out over large areas.

Although a new inventory had been started based upon 1997 aerial photography, it was not available at the beginning of the 2001-2006 FMP planning process in 1998-1999. It usually takes two to three years to develop the FRI maps after acquiring the aerial photography, but for the Dryden Forest FRI six years was required. For this reason, the existing forest inventory that was based upon 1983 aerial photography was used in the 2001-2006 FMP.

The 2003 IFA was concerned that the FRI used in the 2001-2006 FMP was outdated and hence the strategic direction might be questionable. In response to a recommendation, a comparative analysis of the 1983 and 1997 FRI was completed and provided in the Supplementary Documentation to the 2006-2011 FMP.

The analysis found that differences between the two inventories were not significant enough to impact strategic direction. The analysis was reviewed by the audit team and the methods and conclusions are reasonable. Even if the inventories had shown differences in strategic direction, the five-year planning cycle in place at the time would have allowed for corrective actions to be taken as part of the normal planning process with minimal negative impacts on achieving the goal of forest sustainability.

The 2006-2011 FMP was based on the new forest resources inventory that was derived from 1997 aerial photography and included a new strategic direction, harvest allocations, and harvest deferral areas. For example, some marten core areas were enlarged to account for losses in conifer from budworm outbreaks that had not been captured in the old FRI.

The FRI is maintained through regular depletion and disturbance updates using supplemental aerial photography. Field inspection and a review of maps showed the current FRI to be properly maintained to a relatively high standard. Of concern to the audit team is the long six-year period required to develop and approve the current FRI.

MNR has launched an Enhanced FRI program that features new digital image sources of superior quality, faster turn around times, and shorter re-inventory cycles (10 years versus 20 years). This is a commendable move and time will determine how effective this new program will be.

A high priority aspect of this audit is the concern by both the MNR and the DFMC that the enhanced FRI schedule may not provide a suitable inventory in line with the forest management planning cycle. If the cycles of inventory (10 years) and planning (10 years as of 2011 for the Dryden Forest) are not synchronized properly, the advances in the enhanced FRI cycle will be of no benefit to the planning process in the Dryden Forest. The Dryden Forest enhanced FRI is scheduled for image acquisition in 2009 and the final product will only be available for the 2021-2031 FMP. Without synchronizing FRI delivery with the ten-year planning cycle, there is a real risk that plans in the future will be using outdated forest inventory data in the planning process. This problem is not isolated to the Dryden Forest.

Recommendation 3: Corporate MNR must review the FRI and FMP cycles to ensure they are properly synchronized.

The management unit description derived from the FRI is interpreted for landscape patterns, processes and wildlife habitat considerations. The 2006-2011 FMP provides solid descriptions of these critical aspects of the forest ecosystem.

The strengths and weaknesses behind the tools used in these analyses are also described in the 2006-2011 FMP. For example, detailed accounts of changes in habitat matrices based upon new understanding of species requirements are provided. This helps to make sense of trends over time such as between planning periods in Table FMP 5. Without these explanations, some large swings in estimates of habitat availability described in the plan would be nonsensical.

This section of the plan also describes other sources of direction, including many policies, manuals, land use plans and guidelines, that provide further context to the plan that is used in developing the strategic direction. The planning team used this direction in developing the forest management objectives and strategies.

3.3.4 Strategic Direction

The FMP management alternatives were analyzed with SFMM. SFMM results, inputs, and the corresponding assumptions were well documented in the plan text and associated Analysis Package. The Analysis Package included a particularly good job of outlining assumptions and sources of direction which were used to create input parameters such as fire cycles and forest succession pathways.

The plan text summarized the analysis of mandatory management alternatives with respect to sustainability criteria as required. The analysis of additional alternatives to investigate different silviculture strategies was noteworthy and commendable. The audit team cross-referenced SFMM files with FMP text and tables and confirmed plan documentation was consistent with the outputs from modeling.

The audit team reviewed many of the model inputs such as yield curves, fire cycles, wildlife values, and succession pathways. All input parameters were discussed in the plan text and generally appear to be well-founded on available information. One area of concern was forecasted Jack Pine renewal levels given the lack of herbicide use on the Forest. This concern and its implication to the future forest condition are discussed further in Section 3.4.5.

3.3.5 Operational Planning

Areas of Concern

The protection of forest values is an important consideration in forest management planning that begins with timely and accurate identification of values (e.g. water quality, important habitat values for wildlife species, recreation areas, etc.). Values are assigned a defined geographic area or area of concern (AOC) with appropriate AOC prescriptions to ensure that forest management operations do not adversely impact them.

Area of concern planning begins with the timely identification of values in areas proposed for forest management. The collection of values information is an MNR responsibility. New values are entered into the Natural Resource Values Information System (NRVIS) which MNR maintains. A values map is produced from this database which is used to ensure that forest management activities are planned to minimize potential adverse impacts to values where values are located in the vicinity of planned operations.

For the 2006-2011 FMP, 16 common and five individual AOC prescriptions were developed to protect the array of values on the Forest. The prescriptions included an analysis of alternatives where appropriate and well documented procedures to ensure value protection. Two AOC prescriptions were described as "exception(s) to specific direction or recommended prescription in an implementation manual".

The first, AOC Identifier Common Code 11, included a provision for permitting tree planting activities to occur between March 15 and May 30 between 200m and 800m from a bald eagle nest site, only at the discretion of the MNR on a case by case basis. The *Bald Eagle Habitat Management Guidelines, June 1987* prescribe that no forest management activities are permissible in this zone during this time.

The second, AOC Identifier Common Code 12, allows tree planting and regeneration survey work from April 15 to September 1 between 200m and 800m from an osprey nest site on a case by case basis with the decision resting with the MNR. The *Management Guidelines and Recommendations for Osprey in Ontario, June 1983* prescribe that no forest management activities are permissible in this zone during this time. The AOC prescriptions include the required monitoring programs.

Similar exceptions to the Eagle and Osprey guidelines were included in the 2001-2006 FMP, with required monitoring programs. The monitoring program has provided support for continuation of exceptions in

the 2006-2011 FMP. The monitoring information is recorded by a NRVIS identifier. A review of this monitoring was performed and provided evidence of its utility as support for the AOC prescriptions.

DFMC followed the required process for the development of Resource Stewardship Agreements (RSAs); however, none ended up being signed. Protection of tourism values was included in the AOC documentation as required.

The 2003 IFA recommended that *"The supplementary documentation for AOCs is to include all public comments, as well as a description of how they were addressed in the proposed prescription (Criterion 3.1.5)."* The 2006-2011 FMP AOC supplementary documentation did include public comments and, where relevant, also included a description of how comments were addressed.

Harvest

The operational planning requirements of the FMPM were met. There are several aspects of operational planning that, although they met FMPM requirements, deserve some additional consideration in future plans.

Section 2.4.3.2 Operational Planning of the 2006-2011 FMP refers to the *Forest Management Guidelines for the Protection of the Physical Environment* for several recommendations concerning compaction and rutting. The first recommendation is to schedule harvest and site preparation for the appropriate season for the site.

The audit team noted three sites where soil compaction was a problem (see Section 3.4.3) and other sites that had been cut in the winter but had physical characteristics that are better suited for summer harvests (e.g. well drained coarse soils). Instead, certain fine textured sites with higher risks of compaction were cut when the soil conditions were wet. Damage should be avoided by ensuring operations on these sites occur under dry or frozen conditions.

Steps can be taken at two levels to help reduce the incidence of site damage. The first level is operational planning where the sites are identified on maps as being sensitive. The second level is by training operators to recognize the conditions where site damage is occurring and modify operations accordingly. For example, sensitive sites can be mapped using ecosite attributes in the FRI or using themes from other map sources (e.g. NOEGTS). The maps could be a useful stand alone operational planning tool. The maps could also be used to assign a unique forest unit designation depending upon forest cover characteristics with silvicultural ground rules that further help to reduce site damage by restricting operations to dry or frozen conditions.

The audit team recognizes that DFMC has made attempts to address this problem. Still, with the Dryden Forest's extensive clay-belt, further attention is needed to address the problem.

Recommendation 4: DFMC must develop operational planning and operator training tools designed to enhance the protection of sensitive sites for the next FMP.

There are 151 second-order watershed areas on the Dryden Forest that are forecasted to contain disturbed area by 2011. Of these, nine have disturbance ratios exceeding 50%. It is noted that four of the nine had greater than 50% disturbed area at plan start in April, 2006. Due to the broken topography, relatively high proportion of water and streams on the Dryden Forest, and quantity and proximity of patent land, the average size of second-order watersheds is also relatively small, so it is not surprising that some watersheds have more than 50% disturbed area.

Although the *Forest Management Guidelines for the Protection of the Physical Environment* suggests harvest patterns should be adjusted to limit the number of watersheds exceeding 50% disturbed area, the planning team felt the impacts were small and that other higher order objectives such as natural

disturbance pattern emulation and harvest scheduling to meet the strategic direction take precedence. The 2004 FMPM no longer requires a discussion of second order watershed impacts, in part for these very same reasons. This is a concern for the audit team.

Watershed disturbance areas greater than 50% can lead to increased water yields and peak flows. Although this occurs naturally after wildfire, the proximity to private land and the well developed road networks suggest that infrastructure and property may be at risk to higher peak flows. One mitigation measure is increasing culvert sizes within these watersheds. Other mitigation measures may also be appropriate. The audit team offers the following suggestion for consideration. District MNR and DFMC should consider mitigation measures in second order watersheds that exceed 50% disturbance areas in the development of the next FMP.

Silviculture

Section 2.4.4.2 of the 2006-2011 FMP fully discusses the planned renewal program for the 2006-2011 term including natural renewal, site preparation activities, direct seeding, planting, tending and spacing activities. There are no pest management areas, or prescribed burns planned (other than slash pile burning). Section 2.4.4.3 of the 2006-2011 FMP outlines the renewal support required for the term. Planned tree seed collection, planting stock production, and tree improvement activities are discussed in detail.

In the 2006-2011 FMP planned renewal and renewal support is compared to the Selected Management Alternative (SMA) levels for the five-year term. The planned renewal and renewal support program supports or exceeds the levels determined in the SMA. However, the auditors do not agree with the silviculture program devised for the SMA. The planned tending program will not lead to a desired future forest condition dominated by pure conifer forest units. This is fully discussed in Sections 3.4.1, 3.4.4 and 3.4.5.

Access

The Dryden Forest is traversed east to west by the Trans Canada Highway (Hwy #17), with Highway #105 running north to Red Lake, Highway #72 running northeast to Sioux Lookout, and Highway #502 running south to Fort Frances. With its long history of forest management, much of the Dryden Forest is extensively accessed. The 2006-2011 FMP contains no 20-year primary road construction; however, one existing primary road (Twin River Road) was planned for an extension of 1.2 km.

Only one alternative for the extension of the Twin River Road was provided in the FMP documentation. This was appropriate since the extension followed an existing road bed and no values would be impacted. A number of planned secondary roads were included in the FMP with reasonable rationale and analyses of alternatives. As required, an outline of primary and secondary road construction and use management was provided in Table FMP-26.

DFMC and MNR prepared a comprehensive review of the entire road network on the Dryden Forest and reclassified roads according to their length of use. The 2006-2011 FMP *"...contains seven secondary that are being reclassified as primary roads..."* *"No road construction or water crossing upgrades are expected from this reclassification."*

There are differences in opinion between MNR and DFMC of what defines a primary versus secondary road as it relates to the road funding formula. The definitions used in the 2006-2011 FMP are based upon those in the 1996 FMPM. There is some discussion in the 2006-2011 FMP about the changing definitions expected by using the 2004 FMPM. However, there is no discussion about roads funding in this context. Rather, this is an issue emerging in the development of the 2011-2021 FMP and could be considered beyond the scope of this audit. Since this IFA report will be used in developing the 2011-2021 FMP, and at MNR's request, the issue was examined in some detail.

The 2004 FMPM and Article 1.1g of the access road maintenance agreements that came into effect in 2005 define primary roads as follows:

"Primary road" means a road that provides principal access for the management unit, and is constructed, maintained and used as the main road system on the management unit. Primary roads are normally permanent roads.

The 1996 FMPM matches the above definition for primary roads but qualifies further: "although there may be significant periods of time when specific primary roads are not required for forest management purposes."

The 1996-2001 FMP had a more narrow definition of primary roads as follows:

Primary roads are constructed, maintained and used as the main all-weather road system which provides access to the management unit as a whole. Primary roads are used continuously and frequently, for the transport of personnel and equipment to and within the management unit, and for the transport of wood from the management unit to wood-processing facilities. Primary roads are essentially permanent roads, and are regularly maintained, with an expected life in excess of 15 years.

The implementation of the agreement used the classifications from the FMPM in effect at the time of the agreement. Some Districts allow for amendments to the plans produced under the 2004 FMPM to allow for funding of what were once classed as secondary roads (50% as eligible) to be classed as primary roads (100% of maintenance is eligible) under the new definition.

In the first year of the program, the amount of funds available to a District was based upon the average length of primary road maintained in the period 2000-2005 by the forest industry compared to the total amount maintained by the province. After this allocation was made from the provincial total to the District portion, the District MNR and the SFL reached an agreement on specific roads for each forest management unit. Allocation of funds is now based upon an averaged three year harvest volume basis.

Many of the access roads off of the highway could be classed as primary. However, the SFL does already enjoy a comparative advantage of better than average access along publicly funded highways. Of concern is that both infrastructure and the willingness of some Districts to amend plans to reclassify roads may vary across the province. Perhaps the length of highways should also be considered in the funding allocation formula that partitions the provincial fund to each District.

This is a question of MNR providing a level playing field across District boundaries. Although each District should administer the fund on a road-by-road basis for each Forest Management Unit, some further consideration of funding allocations at the Regional and Provincial level that take into account existing infrastructure such as highways and municipal roads is warranted. In addition, the amendments to plans to reclassify roads deserve a higher level review that considers comparisons from across Districts. To address this concern, the audit team suggests that Corporate MNR review its forest access road maintenance funding allocations taking into account existing municipal and provincial road networks in addition to audits of amendments to road classification since the program began.

3.3.6 FMP Submission, MNR Plan Review and Approval

The plan title, certification and approval page was not complete as it failed to include the name of the plan author's organization (DFMC) as required. The plan contributors' page was completed but since it did not include the title and plan period it did not follow the template as displayed in the 1996 FMPM. However, this information was captured on the plan title page.

The FMP submission, reviews and approval meet all the requirements specified in the 1996 FMPM. For the 2006-2011 FMP, the Dryden District MNR planning team members and support staff were included as reviewers. This is an interesting feature of plan review in Ontario where MNR planning team members can be and often are also plan reviewers. This is an example of the complex hybrid role of MNR as both partner and regulator.

3.3.7 Contingency Plans

There were no contingency plans planned or implemented during the audit period.

3.3.8 FMP Amendments

A total of 25 amendments were requested to the 2001-2006 FMP and 12 of those were initiated during the audit period, although two were never processed. Of the ten that were processed, nine were classified as administrative amendments with one deemed minor in nature (Amendment #25). It allowed for a salvage cut in response to a blowdown event that occurred on June 23, 2005.

There were eight amendment requests to the 2006-2011 FMP during the audit period. One request was not accepted by MNR (Amendment #7 was addressed through Amendment #2), and the remaining were accepted, processed, and eventually approved. All were recommended for administrative classification by the LCAC but two amendment requests were deemed to be minor amendments by the District Manager and hence, required some level of public notification. One related to addressing outstanding FMP commitments to add insular and peninsular residual areas to approved harvest blocks to meet NDPEG requirements (Amendment #2) and the other was to allow for construction of a primary forest access road along an old local roads board trail (Amendment #8).

All amendments that were processed and approved were done so in a timely manner except one. Amendment #2 was originally submitted on June 5, 2006 and was approved on June 17, 2008. The two-year time period did not cause operational problems because the rate of harvest had slowed down in response to market conditions.

The FMP text planned to address the issue of implementing NDPEG. The plan notes that additional harvest area (432 ha according to the FMP) to offset losses arising from the implementation of NDPEG would be provided through amendments in Year 1 or 2.

3.3.9 Annual Work Schedules

The annual work schedules (AWSs) met all FMPM requirements. A significant amount of area is allocated for harvest in the first two years of the planning period. The AWS text explains that this allows operations to move based on weather and site conditions consistent with efforts to avoid site damage and meet market conditions. These large up-front allocations also recognize the different capacity among operators. Despite this emphasis on flexibility, some site damage still occurs (see Section 3.4.3).

Forest Operation Prescriptions (FOPs) for harvest, renewal, and tending operations were included in each AWS. The prescriptions were consistent with the Silvicultural Ground Rules (SGRs) in the applicable FMPs and were prepared according to requirements in the FMPM and *Forest Information Manual* (FIM). There was one exception where the FOP revision process was not followed. Instead of having a revised FOP in place prior to operations commencing, changes are added to the following year's AWS. Although this process has worked for DFMC and MNR staff, this does not follow direction in the FMPM and FIM that a FOP be in place and any changes certified by an R.P.F. prior to operations commencing. Following this FMPM requirement need not be an onerous task and is not considered a revision to the AWS. FOP revision may be as simple as faxing a new certified stand list to the MNR Area Forester for inclusion in the AWS.

Recommendation 5: DFMC must ensure that Forest Operations Prescriptions are updated in the AWS prior to operations commencing.

3.4 Plan Assessment and Implementation

An important step in the audit process is to determine whether information used in preparation of the FMP was appropriate and assess the implementation of the selected management alternative.

3.4.1 Plan Assessment

The Forest was generally well described in the FMP and reflected the geology, soils, and sites as well as depletions and accruals and FEC types viewed during the audit. It was noted in a few areas that concentrations of cedar and red pine were not identified by the FRI. MNR has recently completed a survey of the red and white pine on the Forest and plans to update the inventory with this information. The next official FRI update for the full Forest is currently slated for 2016. The digital colour imagery now being used for FRI in Ontario should help in the identification of cedar, red and white pine, and other infrequent species.

The description of the Forest was inconsistent in one significant aspect. Section 2.2.2.2 describes a historic forest condition that by 1965 had a reduced jack pine and spruce component and increased intolerant hardwood component due to past management practices (e.g. winter harvest, limited renewal). This section also notes that about 30 years of silviculture has reversed the trend and brought back some of the jack pine and spruce dominated stands. Section 2.3.5.2 notes that the natural benchmark closely approximates the 1965 FRI which should have been seen as an issue - the benchmark should be a reflection of a natural forest, not an altered forest. The natural benchmark is critical for determining objectives and targets and providing a basis for determination of achievement of many plan objectives, etc.

Recommendation 6: DFMC must ensure that the natural benchmark for the 2011-2021 FMP reflects natural conditions.

As one component of the plan assessment of this audit, concerns raised about the natural benchmark developed for the 2006-2011 FMP led to further investigation of the selected management alternative (SMA) relative to tending levels and conifer versus hardwood trends. The following was gleaned from the 2006-2011 FMP:

- The SMA forecasts a 10% increase in the hardwood component of the hardwood/conifer ratio by 2106, an even higher increase than that indicated in the natural benchmark.
- Section 2.2.2.3.3 details table FMP-3 changes in forest unit abundance from the 2001-2006 FMP to the 2006-2011 FMP. Significant conifer forest units are reduced while forest units with a higher hardwood component are increased. This shift is partially attributed to the lack of tending on the Forest.
- Section 2.3.1 notes the desire to manage to bring the Forest more in line with natural forest conditions. This is clarified in Section 2.3.3.1 - Objective 1.2 notes the desire to emulate the natural benchmark.
- Section 2.3.2 notes the LCAC concern over a possible shift of composition from conifer to hardwood. The issues section does not include LCAC or public concern with the use of herbicide.
- Section 2.3.3.3 notes for the first time public concern, changing wood markets, and proximity to private lands as the main reasons to oppose the broad application of herbicide in the FMP.
- Figure 29 in Section 2.3.4.3 shows a significant long-term under-achievement of the PJ1³ forest unit by the selected management alternative (Alt 5) versus the natural benchmark. The use of $\pm 20\%$ of

³ PJ1 forest unit is defined as those forest stands having a species composition of at least 70% jack pine; and poplar plus white birch not greater than 20%.

the natural benchmark as 'bounds of natural variation' against which the management alternatives are gauged is of concern since the natural benchmark starts at a low value for many forest units due mainly to current forest conditions. Use of the 'bounds' allows many components of objectives to pass muster even though trends leading away from the natural benchmark are apparent. It was noted that Alternative 6 closely emulated the natural benchmark for increased PJ1.

- Section 2.3.4.9 notes that Alternative 6 provided the best emulation of natural benchmark conditions but that DFMC and LCAC and public comment did not prefer this alternative due to the planned application of herbicide.
- FMP-14 indicates 410 ha (6% of the planned regeneration area) of tending for the 2006-2011 period for the SMA. Actual values in FMP-25 are 358 ha (about 5.6% of the area to be regenerated).

In order to at least maintain current levels of conifer, tending programs in the boreal forest normally range from 30-50% of the planned renewal area. The audit team believes that modelled and planned rates of tending in the 2006-2011 FMP will not lead to the desired future forest condition.

Recommendation 7: DFMC must amend the 2006-2011 FMP to increase the amount of planned tending to a level appropriate to reach the desired future forest condition.

The recommendation above is designed to ensure the FMP correlates with the new level of tending to be completed during the term (see below and Section 3.4.5) and provide a record in the FMP of this change.

Another considerable issue found with the FMP was that modeling assumptions related to select post-renewal forest unit transitions (FMP-16) were not realistic. Although little tending is planned in the 2006-2011 FMP, most conifer forest units in FMP-16 are forecasted to remain conifer. This does not conform to field observations and a review of Free to Grow (FTG) records by the audit term or common knowledge regarding forest management in the boreal forest. A majority of FTG stops illustrated an increased hardwood component when compared to the original stand composition. In addition, about one-third of sites viewed during the audit were found to require tending to remain conifer forest units. In general, treatments prescribed on the Forest in the past several years and treatments planned in the 2006-2011 FMP will lead to an increase in mixed conifer or mixed hardwood stands rather than pure conifer stands.

During the development of the 2006-2011 FMP, available FTG data should have led the planning team away from the chosen SMA and towards an alternative that could actually achieve the plan objectives. As planning has already started for the 2011-2021 FMP, the following recommendation is aimed at that plan rather than another amendment to the 2006-2011 FMP.

Recommendation 8: DFMC and District MNR must ensure that the 2011-2021 FMP post-renewal forest unit transitions reflect actual results from the Forest.

The 2001-2006 FMP also included very little planned tending – total of 75 ha of ground chemical and 131 ha of manual release (3.1% of the planned harvest area). It was evident during the audit that the low level of tending planned and implemented will not meet the plan objectives and was deemed a significant issue. To reverse the trends noted during the audit term, an important recommendation (Recommendation 13) is made in Section 3.4.5 Plan Assessment and Implementation – Tending and Protection aimed at addressing the tending issue on this Forest.

3.4.2 Areas of Concern

The field stops included a range of AOC prescriptions including some to protect water quality and fish habitat on cool and cold water systems, private land, high potential cultural heritage values, etc. Examination of the AOCs at these sites demonstrated that AOC prescriptions applied adequate protection of the value(s) in question and were consistent with the relevant FMP and AWS.

AOCs that included a modified zone where harvesting was permitted but site preparation was not permitted showed adherence to the prescription – clearcutting was permitted in 50% of the AOC furthest from the value while site preparation was not permitted. Direct tree planting had been completed in that part of the AOC where site preparation was excluded.

Where road construction through in an AOC was included in the AOC prescription, right-of-way widths through the AOC were within specifications of the prescription.

3.4.3 Harvest

The audit team sampled numerous operations reflecting the diverse site conditions, operators, harvest years, and season of harvest within each year. The harvest was found to be implemented according to the FMP and the utilization of the harvest block and the processed trees was excellent on the vast majority of sites viewed.

Three harvest blocks were found to have site damage from harvest operations by compaction of fine textured soils. The compaction can reduce site productivity for an extended period of time (see Section 3.4.4). The main cause for the observed damage is operating on fine textured soils during wet conditions. These incidents can be further reduced by improved operational planning, operator training, and compliance monitoring. The audit team makes the following recommendation to address this concern.

Recommendation 9: DFMC must enhance its efforts at operational training and compliance monitoring to further reduce the incidence of site damage due to compaction on fine textured soils.

There was one contractor who operated on two sites where the utilization was significantly poorer compared to other sites. There were incidences of wasteful practices (e.g. long butting, high stumps) and site damage on one of the sites. Some of the wasteful practices as defined in the *Scaling Manual* were associated with trying to recover aspen veneer. Quite often the high quality requirements for veneer lead to some residual waste which, although contrary to the manual, is unavoidable.

The compliance reports matched the field observations and the compliance program is being effectively implemented (see Section 3.6). Hence these minor incidences do not reveal a systemic problem requiring corrective action.

Aside from one minor exception viewed in Block 1.063, all values identified in the FMP and on values maps had been protected by properly developing and implementing AOC prescriptions. The exception included less than 10 trees felled in a riparian AOC along an intermittent stream as well as a small area (less than 1/10th ha) of site preparation in the modified zone of the same AOC. The integrity of the value was not compromised. Given the diversity of operators and site conditions, the consistently good performance in implementing the harvest program is a noteworthy achievement.

There are two main harvest systems, full tree to roadside for processing into logs and full tree to roadside for in-bush chipping. The slash is piled and burned from log processing and the chipper debris is piled. The chip piles reduce the amount of area at a landing that remains unproductive. The 1999 IFA had recommended this action ("*Bark and chipper debris should be concentrated to the smallest possible area and where possible, all debris should be eliminated.*") but there is concern that the chip piles may pose a fire hazard. Other forest management units spread the chip debris in a manner that allows for forest regeneration to varying degrees of success. The chip piles and slash piles are increasingly used as a source of hog fuel. Nonetheless, a review of chip waste management practices would be worthwhile. Although losses of productive area have been reduced through piling, their elimination is a worthy pursuit.

Recommendation 10: District MNR and DFMC must review chipper debris management practices to reduce fire risk and the loss of productive forest land.

3.4.4 Renewal

For each of the five years being audited, the audit team viewed a representative sample of all types of regeneration and site preparation operations conducted to assess the effectiveness of the prescriptions. Operations viewed included trencher site preparation, seeding, planting (with and without site preparation), and slash management. Areas prescribed for natural regeneration were also examined. Aerial photographs, maps, annual work schedule, annual reports, and FOIP information was used to aid in the audit of the renewal activities. Although renewal exceptions were planned in both the 2001-2006 and 2006-2011 FMPs, none were executed during the audit term so none were audited.

Renewal activities observed followed the respective FMPs and AWSs (including FOPs – except when revisions were made as discussed in Section 3.3.9) but it was evident at several sites that conifer establishment is being hampered by competition (Figure 3). Tending is discussed in the next section.

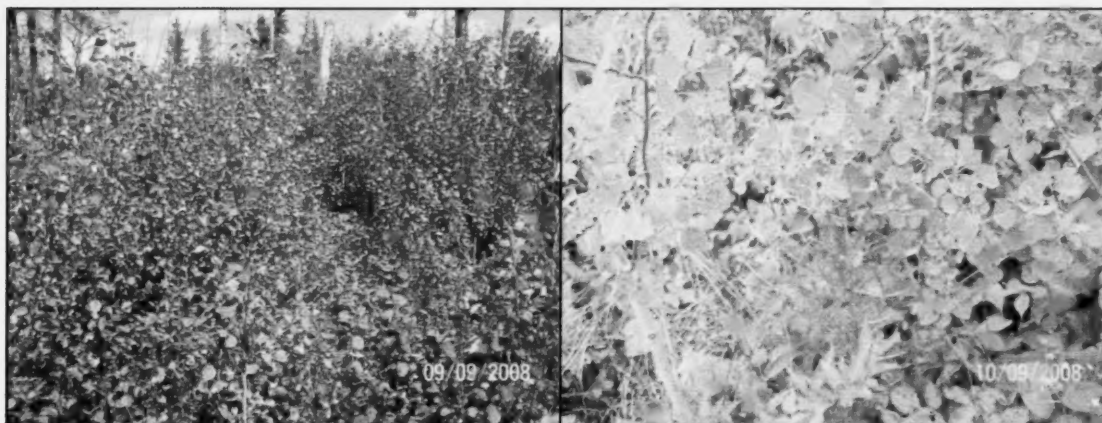


Figure 3. Examples of sites where conifer establishment is being hampered by competition.

Where conifer regeneration was free of competition, the trees were healthy (Figure 4). The audit team noted that uninhibited spruce and pine were developing better than those with competition. Site preparation was well done and excessive site disturbance was only noted in a few isolated areas. The few areas planted without site preparation were not as successful. Planters missed planting opportunities and excessive logging debris and duff inhibited planted stock. This was not deemed an effective treatment on the sites chosen and should be more carefully prescribed in the future.

Some examples of good planting were evident during the audit (Figure 5) but the planting program in general needs remediation. Missed planting areas, poor microsite selection (bottom of trench, jack pine in sphagnum) and shallow trees were commonly viewed during the audit (Figure 6). DFMC has an informative planting manual that describes spacing, planting quantity, etc. and a microsite selection document but direction in these documents was not consistently being followed. In the opinion of the audit team, this is correctable with more on-site supervision by DFMC staff.

Recommendation 11: DFMC must ensure that the planting program is sufficiently supervised and planting errors are minimized.



Figure 4. A conifer tree that is free of competition and obviously healthy.

Although site disturbance was minimized following site preparation, compaction was noted at sites with fine-textured soils, particularly where wood handling or chipping occurred (see Section 3.4.3). Stocking of these areas has been reduced by the compaction. Older examples of fine-soil compaction indicate prolonged reduction of stocking and productivity in affected areas. This concern is addressed in Recommendation 9.

Renewal activities generally occurred where planned and reported but there were minor exceptions. Reporting of site preparation was not accurate at some sites. DFMC noted that mapping is done following a general field assessment (i.e. walk around). This is an outdated and inefficient method for determining areas that have been site prepared. To increase mapping accuracy of site preparation operations, the audit team suggests that DFMC require site preparation contractors to provide GPS mapping of actual activities.



Figure 5. Planting along roads to maximize regenerated area.

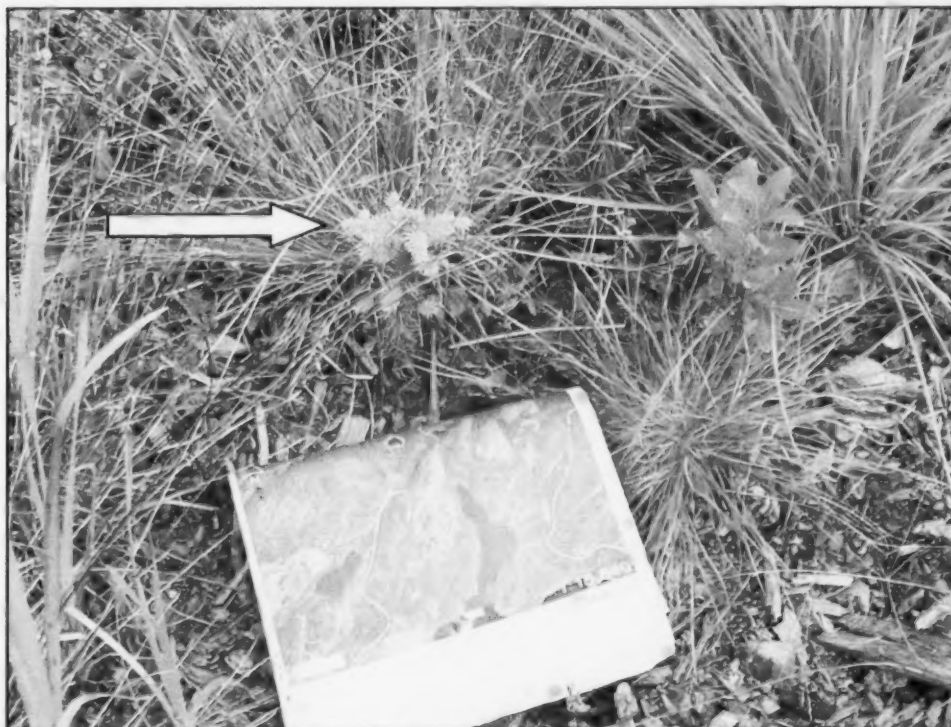


Figure 6. Poor microsite selection that led to seedling mortality, an example of poor planting techniques viewed during the audit.

Heavy deer browsing of mainly pine was also obvious at a number of sites (Figure 7). MNR has been tracking deer browse but there appears to be no strategy for dealing with this issue. Deer browsing has been an ongoing problem for forest renewal in other jurisdictions. The audit team is concerned that deer browsing may exacerbate efforts to meet plan objectives related to increasing jack pine on the Forest. We trust the planning team for the 2011-2021 FMP will consider this when developing that plan.

During the audit term actual levels of renewal activity met or were just short of planned levels. For example, 99% of seeding and 78% of planting and site preparation planned in the 2001-2006 FMP occurred. So far (only the first annual report for the 2006-2011 FMP was available at the time of the audit), actual renewal is near or above the annualized planned amount in the 2006-2011 FMP. Site preparation is the exception at 48% of planned (450 ha completed of 930 ha planned).

DFMC has worked to manage slash on the Forest. Activities include piling, burning and more recently, grinding for use as hog fuel. Most slash was removed on sites where burning occurred, whereas grinding almost fully removed all slash and was viewed as highly effective where it occurred. Slash was viewed as an issue at some sites because it was not yet piled or had been piled but not burned. However, DFMC implements a relatively effective slash program. One issue noted was that planting did not always occur where slash had been removed or redistributed, even when that was the prescription for the area. This was due to a lack of coordination between the activities.

Recommendation 12: DFMC must ensure that productive area recovered through slash management is renewed.



Figure 7. Deer browsing of pine was obvious at a number of sites.

3.4.5 Tending and Protection

Very little tending was observed during the audit as little was completed during the term. As discussed in Section 3.4.1, the 2001-2006 FMP included little tending when compared to the levels of harvest - 75 ha of ground chemical and 131 ha of manual release. DFMC over-achieved manual release during the 2001-2006 term (559 ha – approximately 10% of the area harvested during the period) but no ground chemicals were applied during this period. To date, none of the 362 ha planned for manual tending in 2006-2011 FMP has occurred and no chemical applications were planned or have occurred. In addition, no protection activities were planned or occurred during the audit term.

As discussed in the prior section, the audit team sees this lack of tending as a major issue on the Dryden Forest. Although the selected management alternative for the 2006-2011 FMP excluded the use of broadcast use of herbicide due to public concern, changing wood markets, and proximity to private lands, the audit team found significant examples in the field where tending is needed (in renewal areas that were seeded or planted and in some naturally regenerating stands) to ensure conifer dominance is maintained as per FMP objectives. Note that the audit team is not advocating the increased use of herbicide; a variety of tending options are available. In the near absence of a competition control program, the Desired Future Forest Condition described in 2006-2011 FMP will not be achieved. Site preparing, planting, and seeding of areas without effective competition control is also viewed as a loss of value.

Some older FTG areas viewed during the audit were vigorous and composed of pure conifer (Figure 8). These areas demonstrate the capacity of the Forest under an effective competition control regime and are the model for the Desired Future Forest Condition as described in the 2006-2011 FMP. The audit team views the minimal competition control program planned and implemented during the audit term as the most crucial finding of the audit. Competition must be controlled in these stands to ensure FMP objectives can be met.

Recommendation 13: DFMC must ensure that all stands operated during the audit term that require or are expected to require competition control be treated by the end of the 2010 growing season.



Figure 8. A free-to-grow area as seen from the air.

3.4.6 Renewal Support

Renewal support includes seed collection, nursery stock production, and tree improvement activities. The renewal support system was audited through viewing of several seeded and planted areas and two tree improvement areas on the Forest as well as an examination of annual reports, and information in the 2001-2006 and 2006-2011 FMPs.

Overall, a capable renewal support system is in place that is meeting the needs of the Forest and activities are being conducted according to plan. Seed collection is keeping pace with demands and competition-free planting stock viewed was healthy. However, browsing of mainly pine stock by deer was noted as a significant issue on the Forest. Mixed planting may reduce losses in some areas but it will be difficult to achieve the plan objective of increasing jack pine on the Forest unless deer browsing is controlled. This should be considered by the planning team during development of the 2011-2021 FMP.

One tree improvement site viewed had significant issues related to browsing by deer and frost heave of pots. At a minimum, this site should have been fenced to safeguard the investment. Since the site is operated under a partnership in which DFMC is a minority player, its influence in the operation is controlled by other parties. The audit team suggests that DFMC work with its partner organizations to ensure that improvement investments are secured.

3.4.7 Access

A selection of road construction and maintenance activities as well as water crossing installations was viewed, as was a sample of road construction and maintenance funded through the Road Construction and Maintenance Agreement for the year ending March 31, 2008.

Since the Dryden Forest has a well developed road network, construction of primary, secondary, and branch roads was limited during the period of the audit. As well, access development into and within the majority of harvest blocks did not require water crossings in most cases.

Road construction and maintenance and water crossing installations that were examined had been completed as planned. Road upgrading work was well done in all examined cases. The sample of road construction and maintenance work that was invoiced under the Road Construction and Maintenance Agreement found the work had been done consistent with the invoices.

None of the harvest blocks that were examined as part of the field audit had water crossing installations. Water crossings that were examined were included as part of road construction or upgrading work for primary or secondary roads. In general, water crossing installations had been well done with proper sloping of shoulders, embedding culverts, and rip-rap placed around culverts. Road shoulders that had been seeded were also viewed with good success for preventing erosion.

In one instance, the road approach was inadequate to prevent water from running along the road toward the crossing and creating erosion problems into the stream. This was an isolated instance. DFMC has provided evidence to prove that the situation was remedied so no recommendation is warranted.

One example of a water crossing removal was found during the field portion of the audit. The removal work was found to have been well done with shallow sloping to the stream channel, berms created on either side of the stream for enhanced safety for off-road vehicles, and cross ditching on road approaches on both sides to prevent sedimentation into the waterway.

The audit team examined several Category 9 and 14 aggregate pits for conformance with the *Aggregate Resources Act* (R.S.O. 1990, Chapter A.8). The pits examined were used primarily for road construction and maintenance purposes associated with forest management activities. Work that was reviewed was found to be well done with proper set backs, sloping, and boundary marking (as required for Category 9 pits). Rehabilitation work was also found to be well done.

Field examination included Pit #573 under Permit No. 99145 issued to Weyerhaeuser Company Limited. At the time of the field audit, this pit was being used to supply aggregate to a neighbouring SFL but was inactive. The permit includes a condition that the height of lifts or working faces not exceed 3-4 metres. One large lift in this pit was higher. Also of concern is that these faces are present while the pit was inactive. The high, steep faces in the absence of operations represent a safety concern, particularly for unauthorized ATV traffic. To address these points, the audit team makes the following recommendation.

Recommendation 14: District MNR must ensure that the aggregate pit under Permit No. 99145 is operating in conformance with all conditions of the permit and that working faces are sloped when the pit is operationally inactive.

3.5 System Support

3.5.1 Human Resources

During the audit period, the Dryden District MNR underwent staffing changes in response to corporate MNR direction for cost reduction and strategic restructuring. Forest management plays a very significant part of the District MNR mandate with involvement in three forest management units. The district developed and implemented a staffing model that included the creation of a new position (Forest

Planning Coordinator) in order to approach forest management in a more coordinated and efficient manner. This change shifted responsibility for forest management planning leadership to the Planning and Information Management Supervisor and the Forest Planning Coordinator. In turn, this relieved Area Supervisors of some involvement in the FMP process and allowed them to focus on the delivery of a more balanced MNR program.

The previous audit had concerns with minimal staffing levels at DFMC, particularly the large workload taken on by the General Manager, and apparent associated issues that the audit encountered, and issued a recommendation in this regard. During the preparation of the Dryden Forest 2006-2011 FMP, DFMC employed a General Manager, Planning Forester, Operations Forester, Consulting Forester and a part time Office Manager. Upon completion of the plan, the Consulting Forester's assistance was no longer required. As of December 31, 2006, the Planning Forester was indefinitely laid off due to a combination of lack of work and depressed economic conditions of the forest sector. Thus the General Manager has the support of one full time employee and employs part time help for administration and contracts out field work as needed. In the 2003 IFA Action Plan Status Report the DFMC General Manager committed to acquiring additional expertise when planning begins for the Dryden Forest 2011-2021 FMP.

It is the opinion of this audit team that human resource levels as managed at DFMC are sufficient to address forest management responsibilities on the Dryden Forest.

3.5.2 Documentation and Record Quality Control

DFMC and MNR maintain most of the forest management program documentation in electronic format. A majority of the information provided to the audit team prior to the site visit was in electronic format and hard copies were made available on-site. The audit team encountered a record keeping issue concerning FMP public information centre documentation (see Section 3.2.2) and a document control issue on the MNR website (see Section 3.6.1) that each lead to a recommendation.

3.6 Monitoring

There are three types of monitoring programs described in the *Forest Operations and Silviculture Manual* (FOSM 1995a) that are used during forestry operations in Ontario: 1) compliance monitoring, 2) effects monitoring, and 3) effectiveness monitoring.

Compliance monitoring is used to determine whether or not an operator has conformed to the approved forest management plan and annual work schedule. Effects monitoring is used to determine how a particular treatment, group of treatments or operations interacts with the forest environment such as road building effects on water quality. Effectiveness monitoring is used to determine if management activities are producing expected results.

Most of the IFA procedures focus upon compliance and silviculture effectiveness monitoring. These aspects are examined in greater detail in the sections that follow.

The 2006-2011 FMP expanded some marten core area over the previous plan to account for a decline of conifer composition from past budworm outbreaks that were reported in the new FRI. This is a perfectly rational approach but is based upon marten habitat requirements described in the 1996 Marten Habitat Guidelines. Were the decisions to expand marten core areas based upon a current understanding of marten habitat requirements and have the guides been updated from MNR's programs of effects and effectiveness monitoring as described in the 2004 marten guidelines interpretation note? Under the EA Declaration Order MNR 71-2, the guides should be reviewed every five years and updated based upon effects monitoring data or other scientific reviews.

Effects monitoring is most often done qualitatively on the forest management unit (e.g. nest occupancy surveys, stream crossing inspections). This qualitative approach is supported by quantitative studies at

MNR research facilities (e.g. CNFER) and through cooperative arrangements such as the Forest Ecosystem Science Co-operative Inc. There have been some large projects designed to test the effects and effectiveness of various management guides such as those developed for moose. But knowledge gained through these projects is not finding its way into practice through the regular updates of management guidelines.

Work has been ongoing for several years to consolidate forest management guides into a new set of five guides. The marten guide will become part of the new Boreal Landscape Guide and the Stand/Site Guide, forecasted for completion in 2010 and 2009 respectively. Completion of these two new guides has taken longer than originally planned. These delays leave planning teams less well equipped to make important decisions as they should be.

Almost ten years has passed since the guides, like the marten guide, were proposed for consolidation into landscape and site guides. The marten guidelines have been in effect since 1996 drawing upon studies published in the early 1990s. Effects monitoring of guidelines, such as the work being done at CNFER, deserve as much attention as compliance and silvicultural effectiveness monitoring. The latter tasks are routinely carried out by the District MNR and the SFL holder. Although compliance and effectiveness monitoring are subject to an IFA every five years, it would seem that effects monitoring should also be subject to an independent audit on a regular basis. This audit would make public the progress being made from MNR's extensive effects monitoring program and may add a sense of urgency to complete these projects in a timely manner.

Recommendation 15: Corporate MNR must consider an independent review of forest effects monitoring programs.

3.6.1 District Compliance Planning and Associated Monitoring

Ontario is a lead regulatory agency in Canada for developing an industry self-compliance monitoring and reporting system. The results of the field inspection of sites where forest operations occurred during the audit term clearly show how effective the compliance program has been. These observations were followed up through interviews and reviews of the reporting system, plans, and reports, and provided verification that the system has been maintained to a relatively high standard.

There has been a considerable effort placed on training and certifying compliance inspectors by the MNR and DFMC. These efforts have led to marked improvements in the quality of inspections and reporting compared to the situation observed during the previous IFA.

The reporting system has also evolved over the audit term and a web-based Forest Operations Information Program (FOIP) helps manage the workflow between MNR and the SFL holder. These data are also used in preparing annual reports.

There was some concern expressed by compliance inspectors over workflow issues. For example, the MNR Area Supervisor often develops a backlog of reports before signing off and posting them to the system. However, these issues do not appear to be a significant concern at this time.

The results of the inspections are made available to the public in annual reports through MNR's website (www.mnr.gov.on.ca/en/Business/Forests/2ColumnSubPage/STEL02_167073.html) in Tables AR 12 and AR 13. This transparency and public accessibility is commendable.

Tables on the web were compared to annual report tables received as part of the audit package and downloaded from the MNR forest information portal. The data in the tables do not match between the two sources, suggesting that there is a document control issue.

Recommendation 16: Corporate MNR must review its document control process for its website postings of its annual report tables AR-12 and AR-13.

The planned level of compliance inspections described in the MNR Annual Compliance Operating Plans (ACOPs) was compared to the actual level of achievement described in the Annual Reports. MNR achieved half of its planned inspections in order to use its field resources in silviculture effectiveness monitoring (Figure 9; Section 3.6.2).

The low inspection frequency by MNR would be a concern if the evidence from the field audit and annual reports revealed compliance issues. The rate of non-compliant reports is low (Figure 9; Section 3.6.2), the majority of non compliance reports were classed as minor and only one penalty was levied during the audit term.

3.6.2 SFL Holder Compliance Planning and Monitoring

The planned level of compliance inspections described in the Compliance Plans in the FMPs was compared to the actual level of achievement by DFMC as described in the Annual Reports. The Company managed to meet its planned inspections. Figure 9 presents planned versus actual compliance inspections for access, harvest, and renewal activities and compares the frequency of non-compliance findings by DFMC and MNR.

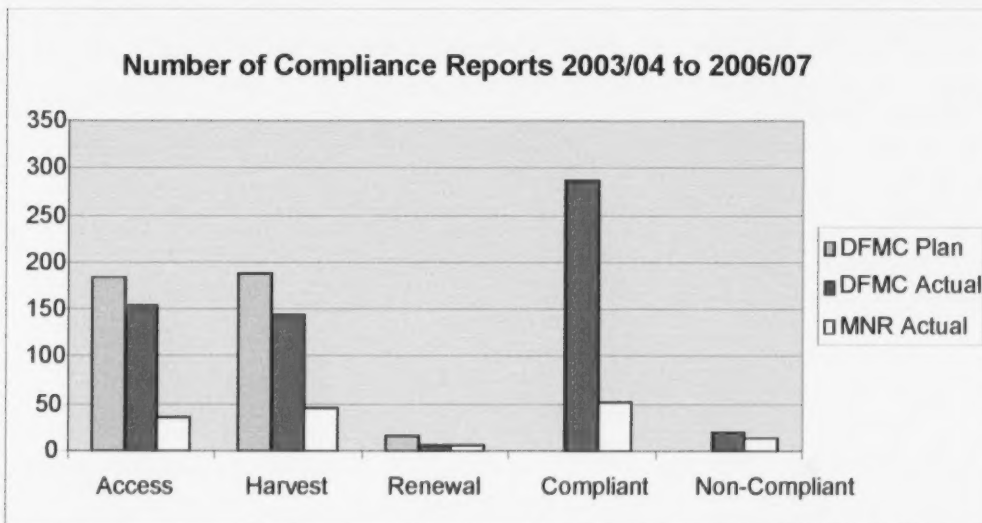


Figure 9: Comparing planned versus actual compliance inspections conducted by DFMC and MNR; comparing the frequency of non-compliance findings by DFMC and MNR.

In conclusion, the compliance program is operating properly with some small reporting issues. The rate of compliance is quite high suggesting an effective working relationship between managers, regulators, and operators.

3.6.3 Silviculture Standards and Assessment Program

The silviculture monitoring program was assessed through examining actual field data, reviewing all annual reports and through viewing a sample from each year surveyed, of sites deemed free-to-grow (FTG) during the audit term. MNR records of silviculture effectiveness monitoring completed in 2006 and 2007 were also analyzed and DFMC and MNR staffs were interviewed.

Annual reports correctly summarized the FTG survey findings in most cases – there were a few exceptions which are discussed in Section 3.6.5. Field results were also verified as being correctly updated in the inventory.

There was an under-achievement of the 2001-2006 FMP planned FTG program - 3,185 ha completed of 6,550 ha planned (49%). However, DFMC also updated approximately 7,000 ha of older depleted stands for use in the planning inventory used in the development of the 2006-2011 FMP. For the most part, the survey methodology used to complete the update was the same as is used for the FTG program. As a result, DFMC in essence over-achieved FTG surveying for the 2001-2006 term. So far, the 2006-2011 FMP planned FTG program is close to being on target – 1,488 ha completed of 1,752 ha planned (85% - based on annualized 2006-2011 FMP and 2006-2007 Annual Report).

Overall, the level of FTG program planned and implemented during the audit term was sufficient for reporting on effectiveness of forest operations in meeting plan objectives. The quantity was also consistent with past levels of harvesting. However, as discussed in Section 3.4.1, available FTG information was not used when developing post-renewal forest transitions for the 2006-2011 FMP and a recommendation is given in that section.

The ground-based FTG survey methodology used during the audit term was deemed effective in correctly determining stand characteristics. According to Annual Reports during the audit term, regeneration success (i.e. meeting silviculture standards for any silviculture ground rule) was 100% for sites surveyed. Unfortunately, silviculture success (i.e. meeting standards for planned silviculture ground rule) was only 36% for the 2001-2006 term and 46% in the 2006-2007 Annual Report for the 2006-2011 FMP. The low silviculture success rate is largely a result of the increase of hardwood component in most stands. This is mainly due to the inadequate competition control program that has been and is still in place on the Forest (see Section 3.4.5).

Also, it was noted that although GPS units were being used to aid in locating plot locations during ground surveying, GPS data was not being integrated with the survey results. Adding spatial information to survey information is an effective means of stratifying treatment areas and determining specific areas that may require additional treatments (e.g. fill plant, competition control). The permanent spatial record is also important for documentation purposes. As no requirements are being neglected and the existing program is providing the required monitoring, no recommendation is made with regards to incorporation of spatial data with FTG records.

Although the FTG surveying levels and methodology in place are deemed adequate to meet monitoring needs, no systematic program is in place to assess early/intermediate effectiveness of silviculture treatments and/or the need for remedial treatments. Delaying assessment of naturally regenerating and treated areas until time of FTG assessment is not deemed a reasonable risk management strategy.

Recommendation 17: DFMC must develop and implement a systematic program for assessing silviculture treatments in advance of FTG surveying.

3.6.4 Monitoring Indicators of Forest Sustainability

MNR categorized the various IFA procedures based on complexity and their potential impact on forest sustainability. Protocols associated with this section have all been assigned a risk rating of medium. The IFAPP directs the audit team to assess through sampling, per audit principle and associated criteria, 50% of the medium risk protocols. The audit team selected no protocols from this section to be investigated as part of this audit.

3.6.5 Annual Report

Annual Reports for years 2003-2004, 2004-2005, and 2005-2006 of the 2001-2006 FMP, and 2006-2007 of the 2006-2011 FMP were reviewed for this audit. The most recent year, 2007-2008, was neither due nor available at the time of writing this report.

In each fiscal year of the audit term except for 2004-2005, MNR took the opportunity to review the annual report for completeness and accuracy. The 2004-2005 AR was accepted without review by MNR via the FI Portal on December 18, 2005. In most cases, DFMC addressed the comments provided by MNR and submitted a revised report in a timely manner. However, for the 2003-2004 AR Part 1, DFMC did not resubmit the revised report until May 15, 2006, over two years after the initial submission. In light of the fact that every AR following the 2003-2004 fiscal year was submitted, revised (where required), and resubmitted in a timely manner, a recommendation is not warranted.

The Annual Reports were essentially complete and were noted to generally improve in content and accuracy through the term. For example, roads monitoring information was absent in the 2003-2004 AR but included in subsequent submissions. As well, water crossing monitoring information was included in the ARs as was a description of AOC exceptions monitoring as described in the FMPs.

The Year 10 Annual Report (2005-2006) included the additional information required by the 2004 FMPM and had some good discussion regarding updates to model inputs. The main issues noted with Annual Reports, included:

- Several discrepancies were noted between tables and text in some Annual Reports and when compared to text or tables in applicable FMP.
- Incorrect results were noted in some cases e.g. 2005-2006 AR text suggests only 36% of surveyed area was FTG – this is actually the silviculture success rate.
- There is little discussion regarding remediation of compliance problems in the Annual Reports. For example, in the 2003-2004 AR, wasteful practices are noted as a compliance issue but no remedies are discussed. Several other compliance issues are noted in the spring submission of this AR but there are no discussions regarding remedial measures that are to be taken.
- Variable use of the words tending, spacing, etc. in a few Annual Reports is confusing.

Recommendation 18: DFMC must ensure all Annual Reports are complete, accurate and clear.

3.7 Achievement of Management Objectives and Forest Sustainability

3.7.1 Year 10 Annual Report

The 2005-2006 Year 10 Annual Report for the Dryden Forest was examined for this audit. The 2005-2006 AR was prepared to report on the activities carried out between April 1, 2005 and March 31, 2006 as well those for the Year Ten Annual Report as described in the phase-in requirements of the 2004 FMPM. The 2004 FMPM has replaced RPFOs with Year Three, Year Seven and Year Ten Annual Reports.

Examinations included planned versus actual levels of operations including depletion, wood utilization by licensee, natural depletions, renewal and tending, and primary and secondary road construction and maintenance. Reasonable explanations were provided for differences between planned and actual levels of achievement.

The Analysis of Forest Disturbances section of the report describes the difficulty in achieving desired distribution of disturbance size classes on the Dryden Forest. Although 40% of the disturbances in the 10-130 ha range are targeted, 79% will be in that size range. Further, MNR North West Region provided direction to target 21% of the disturbances greater than 1,041 ha in size and only 1% was achievable. The report discusses past management direction and practices as a barrier to attaining these levels quickly.

The Review of Renewal and Tending Activities section rationalizes shortfalls in renewal achievement (86.6% of planned) as resulting from an under harvest during the five-year period (84.7% of the planned harvest level was achieved). The report discusses that low percentage of FTG achievement ("...only 36% of the area assessed was considered FTG.") with the conclusion that FTG surveys had been conducted too early and height growth had often not achieved minimum standards to qualify as FTG. DFMC has recognized the problem and recommended changes that include improved spatial tracking of depleted areas to correct the problem.

As part of the Review of Forest Modelling Assumptions, the report discussed Growth and Yield. SFMM estimates for the 2001-2006 FMP presented a yield of 145.6 m³/ha. The allocated area predicted 134.2 m³/ha based on the yield curves. The actual harvest resulted in 125.9 m³/ha. These figures indicate sound knowledge of the forest by members of the planning team for the 2001-2006 FMP. The report discussed required components for assessment of achievements for specified target areas. Several of the more important subjects are discussed below.

Harvest: The harvested area achieved 84.7% of the forecasted harvest area from the FMP. Harvest by forest unit was found to be within a reasonable range of their targets (79% to 103.5%). The two forest units which were over utilized were BF1 and PR1 and the over achievements were 0.7 ha and 0.4 ha respectively. Harvest areas for the OC1 and OH1 forest units were considerably under achieved due to the lack of markets for cedar and ash. All harvest was accomplished using the clearcut silvicultural system. There were 95 planned clearcuts totalling 9,698 ha. Five clearcuts were larger than 260 ha in area, totalling 1,944 ha.

Wood Utilization: The harvested volume was 707,993 m³ or 79.4% of the forecasted 890,800 m³. The text in the report indicated that 84.7% was achieved using these figures representing "...11% short fall in volume from the harvested areas..." The under achievement of harvest volumes is a concern to DFMC as "...reduced volumes will increase the cost per m³ for managing the Dryden Forest and make the purchasing of wood more expensive for local mills."

Renewal, Tending, and Protection: Table AR-7 presented some differences between planned and actual as reported in the Annual Report. Natural regeneration levels achieved 92.1% of the five-year target. The explanation was that field examination of harvest blocks was performed to determine suitability for artificial renewal methods with remaining areas left for natural. The discussion is reasonable. Planted area was 77.9% of planned while 99.4% of planned seeding area was achieved. Manual tending (spacing) was performed on 77 ha or 55% of planned area while 77.6% of the mechanical site preparation target has been achieved.

Revenues and Expenditures: During the term, \$3,492,000 was contributed to the Forest Renewal Trust Fund while renewal costs were \$4,198,000, which is \$706,000 more than revenue. The result was a reduction of assets in the Trust Fund drawing the fund total down to approximately \$1,100,000, still well above the minimum balance of \$522,000. As a result of the 2003 Dryden Forest Independent Forest Audit the minimum balance was to be reviewed by DFMC and the Dryden District MNR in consultation with the lead MNR Forest Management Branch representative by January 1, 2006. The renewal rate for 2005-2006 was maintained at \$6.00 for conifer and \$2.00 for hardwood as this figure maintains an adequate balance of funds while allowing DFMC to conduct the renewal program planned for in the FMP.

Assessment of Regeneration and Silvicultural Success: During the term, 3,183 ha or 48% of the target was assessed for FTG, of which 1,142 ha was successfully regenerated to the projected forest unit. Of the 3,183 ha assessed, 2,866 ha had SGRs that were not targets for sampling in FMP-28. In 2004, DFMC conducted field sampling of approximately 7,000 ha of regenerated harvest areas (approximately 3 m tall) in order to update the 2006 Planning Inventory. As well, the majority of the barren and scattered area from the 1997 FRI was surveyed (aerial) and reclassified for the planning inventory. This information was useful in updating the 2006 planning inventory.

Synopsis: Almost all operable areas within allocations were completed. Renewal work was on schedule and renewal assessment work back on track with a large area assessed during the summer of 2006. Mill closures have impacted fibre marketability from the Dryden Forest. "With the sawmill closure in Dryden and pulp mills converting to chips, DFMC shareholders find it difficult to compete with sawmill chip prices. It may be difficult to implement the full harvest during the 2006-2011 FMP as there appears to be a surplus of fibre in the region."

The 2003 IFA provided 15 recommendations. The 2005-2006 Year 10 Annual Report also provided a summary of the status of progress on the implementation of the action plan that addresses each recommendation.

3.7.2 Assessment of Objective Achievement

According to the 1996 FMPM, objectives are developed for benefits or outcomes that can be achieved by managing forest cover. The audit team reviewed the achievement of objectives associated with the Dryden Forest 2001-2006 FMP as described in the 2005-2006 Year 10 Annual Report for the Dryden Forest with a summary presented in Table 3. The audit team also reviewed the achievement of objectives from the Dryden Forest 2006-2011 FMP. A summary of that review is presented in Table 4.

Table 3. Audit team assessment of the achievement of the Dryden Forest 2001-2006 FMP objectives.

Objective	Year 10 Annual Report Author's Assessment of Achievement	Audit Team Comments
A. Forest Diversity		
1. Biodiversity: To maintain long-term forest diversity through sustainable forest management practices.	Existing baseline biodiversity indicators were used in the null scenario and the selected management alternative stayed within the range of natural variation as defined by the null scenario. Preferred potential habitat for the Boreal Chickadee and the Boreal Red-backed Vole was slightly below the lower threshold. Private land not considered when determining sustainability at the landscape level.	Met. Some concerns over loss of pine cover type.
2. Red and White Pine Conservation: To ensure that all age classes of naturally occurring red pine and white pine ecosystems, including old growth stands are present on the landscape now and into the future, while permitting a sustainable harvest of both species.	No Pw was harvested, one 10 ha stand of Pr was harvested; Pr stock was planted annually; 1997 FRI was analyzed to determine age class distribution of Pr and Pw forest units.	Met. Red and White Pine areas preserved on the forest through management constraints.
B. Social and Economic Matters		
3. Industrial Harvest: To provide an opportunity for the forest products industry to purchase a predictable and continuous supply of wood products.	Regional Wood Demand targets were set in SFMM; AHA was completely allocated, 85% was harvested; salvage opportunities were used. Volumes that shareholders and OLLs were able to harvest and market from year to year and throughout the seasons was fairly consistent.	Met. The harvest is fully utilized to the extent possible given market conditions.

Continued on next page.

Table 3 continued.

Objective	Year 10 Annual Report Author's Assessment of Achievement	Audit Team Comments
4. Employment: To provide employment to the forest industry.	Harvest allocations for all Shareholders/OLs as per the SFL; 85% of the AHA was harvested; wood has been delivered from Nipigon in the east to Kenora in the west and Fort Frances in the south and Sioux Lookout to the north.	Met. The forest management practices allow for local employment subject to market forces. Five-year targets were exceeded, met, or very close to being met.
5. Personal Use Harvest: To make available incidental volumes of timber for such uses as fuelwood, building logs, fence posts and other materials for personal use to local users.	A stand of red pine was identified in the 2001-2006 FMP. The AWSs identified cutovers that were available for fuelwood. When interested parties approached DFMC or MNR the harvest of unmarketable fibre from cutover blocks and naturally depleted areas was encouraged.	Met. Areas were made available for personal use harvest. Opportunities for red pine and cedar were identified but not taken.
6. Working with Aboriginal Communities: To work with local Aboriginal communities to identify ways for Aboriginal people to realize increased benefits from the forest.	MNR encouraged input and participation through the Native Consultation Process, level of interest was minimal, but increased slightly during development of 2006-2011 FMPM. Communities are directly or indirectly involved in harvest operations. DFMC maintains regular contact. Communities are satisfied that identified Aboriginal values are protected.	Met. All three communities are involved in harvest operations, two each have a community FRL, a member of the third community holds an FRL. Company and MNR both maintain regular contact with these communities. Despite the opportunity provided to participate in the planning process, Aboriginal response was minimal.
7. Working With other Forest Users: To conduct forestry operations in a manner that considers and respects the other forest users of the Dryden Forest.	MNR led the consultative effort as per FMPM requirements. Mitigative measures taken when necessary, e.g. timing restrictions, modifying block layout, consolidation of operations	Met. FMP process included public consultation. DFMC has modified operations to mitigate impacts when approached by concerned forest users.
8. Sensitive Sites: To protect identified archaeological, cultural heritage and traditional use sites within forest management operations.	All known cultural heritage values were given AOC prescriptions and protected. Input on values was solicited from the public and Aboriginal communities. MNR maintains the updated forest values inventory	Met. One individual AOC identifier was developed and its implementation was examined as part of the field audit. Cultural heritage modelling was used to identify high potential cultural heritage sites. These were afforded protection through AOC prescriptions which included suspension of operations pending further assessments in the event that cultural heritage values (object or features) were identified during operations.

Continued on next page.

Table 3 continued.

Objective	Year 10 Annual Report Author's Assessment of Achievement	Audit Team Comments
C. The Provision of Forest Cover		
9. Forest Landscape: To maintain a forest landscape pattern that will supply suitable habitat for provincially featured wildlife species temporally and geographically over the landscape, within the bounds of natural variation.	Maintain moose and deer late winter habitat within 20% of the maximum and minimum habitat level of the null run. Critical moose habitat and nesting habitat of eagle, osprey, and heron protected by AOCs. MNR biologist reviewed proposed harvest block boundaries to ensure habitat protection. 8.3% of the forest maintained for marten cores areas - below target but acceptable due to fragmentation of forest.	Met. To the extent possible, suitable habitat levels were provided or protected. Forest fragmentation due to past management direction will continue to constrain achievement of this objective.
D. Silviculture Objective		
10. Silviculture: To maintain or enhance the productivity of the forest while maintaining the ecological diversity of the landscape.	All the planned renewal operations were undertaken except an area of chemical ground tending. Some renewal treatments that are intended to produce conifer dominated stands on rich sites, have an infiltration of a hardwood component. In general DFMC feels the forest grew and developed as projected	Partially Met. Minimum stocking targets were met or exceeded. Renewal targets were mostly met except no tending (chemical), FTG only 49% of planned, spacing 76% of planned and plant/SIP 78% of planned. Productive area loss was not minimized through slash reduction and reforestation of redundant roads (planters instructed to not plant roads), many slash piles remain in cutovers and compaction of fine-textured soils has reduced stocking of some stands.

Table 4. Audit team review of the progress towards achievement of management objectives of the Dryden Forest 2006-2011 FMP.

Objective	Audit Team's Assessment of Progress Toward Achievement	Audit Team Comments
1. Forest Diversity		
1.1 Forest Structure: To maintain or move toward a forest structure (individual residual trees) that would be more natural in order to increase the amount of wildlife habitat on harvested areas.	Met	Evidence of proper tree retention demonstrated on field stops.
1.2 Forest Composition: To maintain the area of each forest unit that emulates the Natural Benchmark (With no fire suppression and no commercial harvesting) for the Dryden Forest.	Met	Area by forest unit for the total landbase is projected to follow the Natural Benchmark for the Selected Management Alternative.
1.3 Rare Forest Species/Communities Objective: Protect areas of rare forest species/communities.	Met	Field evidence of red maple retention an example.

Continued on next page.

Table 4 continued.

Objective	Audit Team's Assessment of Progress Toward Achievement	Audit Team Comments
1.4 Forest Pattern Objective (Size, shape, location & adjacency): To develop a landscape pattern that emulates the Natural Disturbance Patterns Template for the Dryden Forest.	Partially Met	There is movement in this direction. Past management direction has created a forest condition that will require some time to achieve the desired NDPE template.
1.5 Old Growth Objective: To maintain the area of old growth in each forest unit (PRW and PR1) so as to emulate the Natural Benchmark (With no fire suppression and no commercial harvesting) for the Dryden Forest.	Met	PRW and PR1 old growth area is forecasted to increase on the total landbase in the Selected Management Alternative consistent with the Natural Benchmark
2. Forest Cover		
To provide and sustain a forest landscape pattern and residual stand structure that will supply suitable wildlife habitat for all species across the Dryden Forest.	Met	Minimum habitat levels for all featured species remained above the lower bounds of natural variation (target level) within the first 100 years. Marten core area targets unattainable due to fragmentation of Forest by private land holdings and past management direction; however, core area increased over last plan. AOC protection implemented on nests and riparian areas.
3. Social and Economic		
3.1 Sustainable Wood Supply Objective: To sustain a continuous and predictable wood supply in order to contribute to the needs of local and regional industrial wood processing facilities.	Met	SMA maintains target harvest levels in excess of 158,000 m ³ /year although slight under achievements in spruce-pine-fir volumes are forecast for some periods.
3.2 Personal Use Harvest Objective: To make available incidental forest products for personal uses such as fuelwood, building logs and fence post material.	Met	There are areas identified for personal use including fuelwood.
3.3 Other Forest Users Objective: To plan and conduct forestry operations in a manner that does not limit the ability of other forest resource users to access the Dryden Forest.	Met	There are few access restrictions on the Forest.
4. Silviculture		
4.1 Renewal Objective: To ensure every forest stand harvested on the Dryden Forest is renewed by the most appropriate and cost effective method to achieve the desired future forest condition.	Not achieved to date	The Desired Future Forest Condition of increased jack pine will not be met through implementation of the selected management alternative for this plan "...does not project the use of wide area application of herbicide as part of its renewal or tending strategy."

Continued on next page.

Table 4 continued.

Objective	Audit Team's Assessment of Progress Toward Achievement	Audit Team Comments
4.2 Intensive Silviculture Objective: To plan and implement a Silviculture program that will meet the objectives relating to wood supply (Socio-economic objective).	Partially Met	Improved seed may be available for all spruce and jack pine by 2011 but hard to confirm at this time. New jack pine orchard is in bad shape. Increase of average volume component of this objective is not determinable at this time as FTG stands visited are too young to be gauged for future wood potential. However, the noted shift from conifer to hardwood will have a negative effect on future conifer wood supply.
4.3 Natural Benchmark Trends: To plan and implement a Silviculture program that follows the general trend of the Natural Benchmark for each forest unit. (Biodiversity objectives).	Partially Met	Area by forest unit for the total landbase is projected to follow the Natural Benchmark for the Selected Management Alternative. See Section 3.4.5 for concerns regarding forecasted Jack Pine area.
4.4 Red Pine & White Pine Renewal Objective: To plan and implement a Silviculture program that will increase the red pine and white pine representation on the Dryden Forest.	Partially Met	Red pine and white pine are being planted. Unfortunately, deer browsing is reducing stocking success of these species.

3.7.3 Year 10 Annual Report Determination of Forest Sustainability

The 2005-2006 Year 10 Annual Report for the Dryden Forest discusses the required components for the assessment of sustainability from the 2004 FMPM. With the last two FMPs being based on two different forest inventories, comparisons between data from the plans was termed difficult, although reasonable explanations and trends are described.

The Report provides an assessment of the achievement of management objectives for the 2001-2006 FMP. Objectives in the FMP were separated into four sections as required in the 1996 FMPM: Forest Diversity; Social and Economic Matters; Provision of Forest Cover; and Silviculture. The AR assessment of management objectives clearly discusses each of the objectives and their associated management targets and strategies with a brief assessment of the achievement of each during the term of the 2001-2006 FMP. Finally, general comments for each of the required sections were provided.

Forest Diversity Objectives: No substantive change occurred in forest composition and age class on the Crown managed forest between 2001 and 2006. Two different forest inventories make assessments difficult although two changes were found worthy of mention. First, there was an increase in the spruce lowland on the Forest caused primarily by improved forest unit script. Second, the PJ1 forest unit has decreased while increases occurred in both the IHM and MC2 forest units. According to the discussion, the planning team for the 2006-2011 FMP recognized the problem and developed objectives for the FMP to increase the PJ1 forest unit.

Social And Economic Matters Objectives: The actual area harvested during the five-year term was 84.7% of the planned harvest level, generating 79% (707,996 m³) of the targeted volume. With a number of mill closures, shareholders and overlapping licensees had a more difficult time finding markets for their wood. DFMC provided opportunities for personal use harvest of wood fibre for fuelwood and for red pine and cedar stands. Opportunities for Aboriginal communities were provided. The report summarizes the contribution to the regional economy of wood delivered from the Dryden Forest during the period.

Provision of Forest Cover Objectives: While SFMM-generated habitat levels for six species exhibited a drop from 2001 to 2006, only the habitat levels for pileated woodpecker and Swainson's Thrush showed

drops of any magnitude. Further complicating the comparison was the use of two different forest inventories as the basic inputs for the modeling exercise. Additional targets under the forest landscape objective dealt with moose, deer, marten, eagle, osprey, and heron strategies.

Silviculture Objective: A number of targets and strategies were developed for the silviculture objective, all of which are assessed for completion during the period under review. Efforts to increase the PJ1 forest unit are illustrated. The PJ1 harvest was 18.9% while the renewal level of PJ1 was 30.1%. Efforts to ensure that harvested areas were renewed within two years are assessed with reasons for exceptions described. Efforts were made to ensure that adequate funds were available in the Forest Renewal Trust Fund to meet the level of silviculture intensity as set out in the Selected Management Alternative.

Although the report provides a detailed analysis for the subject term, the summary of the report provides no recommendations to manage inadequate achievements of objectives, targets, or strategies. While the majority of objectives had been achieved, some strategies were not. Recommendations to ensure the successful implementation of more significant strategies are an important consideration in the determination of forest sustainability and the development of subsequent FMPs.

An example is the under achievement of FTG. Where FTG surveys were forecast to be performed on 6,552 ha during the 2001-2006 FMP, assessment was conducted on 3,183 ha (48%), of which 1142 ha (36%) met the renewal standard. Although the report states the following: "...it was felt that the renewal surveys were being planned too soon following the renewal treatment. Renewal surveys were conducted again during the summer of 2006"; a recommendation to ensure adequate FTG assessments is warranted. The following recommendation is provided to consider this example.

Recommendation 19: DFMC must ensure that recommendations are developed in the determination of sustainability in annual reports where improvements are warranted.

3.7.4 Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

As part of the Independent Forest Audit, a Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report (TAR) was required to be completed by DFMC for the Dryden Forest as described in the 2008 IFAPP. The TAR for the Dryden Forest covered three plans; 1997-2002 FMP, 2001-2006 FMP, and the 2006-2011 FMP, and was authored by the plan author for the last two of these plans. Reporting requirements for the TAR were met.

Total Production Forest remained relatively stable over the 15-year period with reduction in area from 119,160 ha to 117,544 ha. This reduction was associated with the acquisition/disposal of Crown-owned Patent Land and withdrawals through the Ontario Living Legacy initiative. B&S/NSR area was reduced significantly from 20,117 ha to 222 ha as backlogged FTG assessments were completed for the area burned in 1980. Correspondingly, significant area increases in some working groups occurred over the 15-year period mainly due to the decrease in B&S/NSR area. Red Pine forest unit area increased significantly (220 ha) due to a consistent program of planting red pine. Although the report discusses a significant increase in the Jack Pine forest unit area (15,088 ha) between the first and second past plans (due to the classification of a large amount of the 1980 burn as FTG), the increase over the period under review is far less significant at 3,254 ha. The Balsam Fir forest unit decreased dramatically due to a spruce budworm outbreak. Poplar and Spruce forest units remained stable during the fifteen year planning period.

Three tables were provided to illustrate the description of forest units for each of the three FMPs used for this report.

Harvest volume data for the period showed a decline in annualized volumes both in planned levels (from 234,710 m³/yr to 157,148 m³/yr) and actual levels (from 189,438 m³/yr to 140,654 m³/yr). For both planned and actual, the most significant decline was between the 1997-2001 FMP and the 2001-2006

FMP and was attributed to the "...concentrated harvest of high-volume jack pine stands in the 'checkerboard' sand flats in an attempt to establish a more natural disturbance pattern on the forest." The high volumes associated with those stands is also demonstrated in the planned volume per hectare (153.9 m³/ha) and achieved volume per hectare (146.2 m³/ha). Subsequently, planned levels were 134.2 m³/ha and 123.4 m³/ha while actual levels were 125.8 m³/ha and 147.5 m³/ha. The latter achieved value, although high, is derived from only one year of the 2006-2011 FMP.

Utilization levels were fairly stable with the percent of actual vs. the percent of planned being 85% (1997-2001), 85% (2001-2006) and 75% (2006-2011) over the course of the three planning terms. The report credits this to "...the steady demand for all species in the last fifteen years and the fact that the Dryden Forest Management Co. fully allocates the available harvest area to the Shareholders and the Overlapping Licensees giving them the opportunity to take advantage of short-term wood demands. Full utilization is unlikely as Cedar, Black Ash and Larch are not in demand locally."

Across all forest units, the forest exhibits movement towards a more balanced age-class distribution. Still, the 21-40 age class gap that was evident in the 1997-2002 FMP has moved into the 41-60 age class in the 2001-2006 FMP and 2006-2011 FMP, representing a concern for sustainable wood flow in the future. The older age classes show increases which are attributed to leaving shoreline reserves and the retention of marten core areas and were cited to aid in the achievement of old growth objectives in the future.

Summary Report of Renewal, Tending, and Protection Operations indicates a decrease in silviculture intensity for the Forest as illustrated by the percent of actual artificial regeneration over total even-aged management figures for the three periods: 86% (1997-2001), 75% (2001-2006) and 64% (2006-2011). Increased natural regeneration ratios had been anticipated with the increased poplar harvest in the mid 1990s. These naturally regenerated stands form a large part of the relative reduction in silviculture intensity.

For the reporting of Harvested Area Successfully Regenerated, the TAR included harvest data for the period 1993-1998 as required. The discussion included text about a discrepancy between the amount of area shown to have been harvested in relevant annual reports (5,017 ha) and the GIS database (6,100 ha), and was "...due to a simplified procedure in the GIS updates." Reasons are provided for using the 6,100 ha figure for this analysis.

The TAR indicates that 5,724 ha or 94% of the 6,100 ha of harvest area has been surveyed with all having achieved FTG status. The remaining 366 ha was examined with direction for FTG surveys at determined times depending on the particular situation.

Discussion tracking Forest Unit changes over time was not provided in the TAR. Since forest units were not consistent between the 1997-2002 FMP, the 2001-2006 FMP, and the 2006-2011 FMP, tracking regeneration efforts to desired forest units was not possible.

3.7.5 Conclusions Regarding Sustainability of the Crown Forest

The *Crown Forest Sustainability Act*, 1994, S.O. 1994, CHAPTER 25, provides for the sustainability of Crown forests and defines sustainability as long term Crown forest health. The CFSA further states that "The Forest Management Planning Manual shall provide for determinations of the sustainability of Crown forests in a manner consistent with the following principles:

1. Large, healthy, diverse and productive Crown forests and their associated ecological processes and biological diversity should be conserved.
2. The long-term health and vigour of Crown forests should be provided for by using forest practices that, within the limits of silvicultural requirements, emulate natural disturbances

and landscape patterns while minimizing adverse effects on plant life, animal life, water, soil, air and social and economic values, including recreational values and heritage values.”

Assessments of forest sustainability occur at the time an FMP is prepared and again following FMP completion, and is reported in the Year 10 AR (formerly the RPFO). The methods of planning for and assessing the achievement of forest sustainability are described in the 1996 FMPM, which was the manual used for development of the FMPs under audit. It begins with an eight-step process that includes gathering background information, setting objectives and developing strategies, identification and analysis of management alternatives, selection of a preferred management alternative, and the identification of specific areas for forest operations. Throughout the process, opportunities are available to the public to participate and provide input into the development of the FMP. The assessment of achievement of forest sustainability involves the analysis of forecasts and trends associated with a set of criteria and indicators of sustainability given in the FMPM.

The Year 10 AR requires an assessment of forest sustainability to the extent reasonably possible, but relies on the reporting requirements contained in the 1996 FMPM to satisfy this requirement for plans prepared using that manual, as was the case on the Dryden Forest. In developing its opinion on the achievement of sustainability on the Dryden Forest the audit team considered the following:

- 2001-2006 and 2006-2011 Dryden Forest FMPs;
- Annual Work Schedules and Annual Reports associated with the above FMPs;
- Year 10 Annual Report requirements for the 2005-2006 Annual Report;
- Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report;
- Input from staff of DFMC, MNR Dryden District, and members of the LCAC;
- Written input received by the public; and,
- Implementation and effectiveness of forest management activities as viewed on the field stops.

Based on the information provided and the audit team's review of documentation, examination of the Forest, and interviews with parties involved with or affected by forest management on the Dryden Forest, it is the opinion of the audit team that forest sustainability is being achieved on the Dryden Forest, although improvement in some areas is required as described in the various recommendations contained in this audit report. Table 5 provides a summary of the audit team's assessment of forest sustainability by forest sustainability criteria.

Table 5. Summary of assessment of forest sustainability.

Forest Sustainability Criteria	Met (Yes/No/ Partial)	Audit Team Comments
Biological Diversity	Partial	Forest structure and pattern on track but some concern with jack pine; marten core area less than desired due to condition of the Forest resulting from past management direction and past budworm outbreak. The audit team has concerns regarding achievements of the desired future forest with the low level of tending witnessed in the field.
Forest Condition and Ecological Productivity	Yes	Productive forest area has declined slightly; area of harvest and renewal are in balance.
Soil and Water Quality	Yes	Operations generally consistent with conservation of soil and water resources.
Multiple Benefits to Society	Yes	Forest resource is efficiently utilized given markets and local circumstances; utilization of planned harvest area quite high; timber and non-timber uses are balanced.
Accepting Society's Responsibility for Sustainable Development	Yes	Consultation occurs with other forest users; LCAC is active and contributes positively to forest management planning.

3.8 Contractual Obligations

3.8.1 Sustainable Forest Licence

Area, Term and Pricing

In Ontario forest products companies pay a stumpage fee to the Crown for every cubic metre of timber harvested. A market-based pricing system is used by MNR to calculate this fee. As of March 31, 2008, DFMC had an insignificant outstanding balance owing to the Minister of Finance for stumpage fees.

The Forestry Futures Trust was established to essentially serve as an insurance policy for the province, ensuring that forest renewal activities can be carried out in the event of natural depletions of the forest (e.g. fire, other natural causes) or when a major licensee becomes insolvent. In addition it also has funds available for intensive stand management and pest control on Crown forests.

As of March 31, 2008, DFMC had an insignificant outstanding balance owing for Forestry Futures Charges.

Wood Supply Commitments and Overlapping Licences

Appendix E of the SFL lists the wood supply commitments of the Dryden Forest. The commitments are to: Levesque Plywood; Weyerhaeuser Company Limited in Dryden (now owned by Domtar); Devlin Timber (1992) Company Limited for use in their sawmill near Kenora, Ontario; and Oxdrift Tractor Sales Ltd. for use in the Oxdrift Tractor Sales Ltd. sawmill in Oxdrift, Ontario.

Of the companies listed in Appendix E, only part of the Domtar facility in Dryden remains in operation. Wood fibre has been supplied to this facility as required. With fluctuating markets, shareholders of DFMC and harvesting contractors have needed to find other markets for their products. A considerable range of mills have utilized wood fibre from the Dryden Forest.

Appendix F - Special Conditions of the SFL identifies three Aboriginal-owned enterprises that are guaranteed an annual harvest supply based on a percentage of the Available Harvest Area as calculated in the approved FMP for the Dryden Forest. They included Noopiming Anokeewin Inc., Eagle Lake First Nation, and the Aboriginal Peoples of Wabigoon. These special conditions have been met through the issuance of Overlapping Forest Resource Licenses during the audit term. This is discussed in more detail later in this section under Aboriginal Opportunities.

Manuals

DFMC conducted planning and reporting according to the relevant FMPM and carried out surveys and assessments. The audit noted areas for improvement, as described in the associated recommendations within this report.

Some incidences of wasteful practices were found in the field but were seen as unavoidable in cases where veneer quality logs were being processed. Overall, wasteful practises on the Dryden Forest were found to be insignificant.

Natural Disturbance and Salvage

There was one minor amendment to the 2001-2006 FMP during the audit term to allow for a salvage cut to occur in response to a blowdown event that took place on June 23, 2005. The LCAC recommended categorizing the amendment as "administrative" with a requirement for public notice at the September 12, 2005 meeting. The amendment was upgraded to "minor" by the District Manager to initiate a formal public consultation process. A total of 238.7 ha of salvage harvest occurred, yielding 28,944 m³ of fibre.

Forest Protection

Protection from pest damage was not planned nor implemented on the Dryden Forest during the audit term. Deer browse of pine and recent beetle damage of jack pine stands on adjacent forests may warrant some consideration in the future.

Performance Reviews

The 2003 Dryden Forest IFA for the 1998-2003 term made a total of 15 recommendations (including licence extension). As part of the 2003-2008 audit the auditors reviewed the actions developed to address these recommendations to assess whether planned actions were consistent with the intent of the recommendation and appropriate to address the recommendation; that actions taken followed those described in the approved action plan; and the effectiveness of the action taken. The Action Plan for the 2003 Independent Forest Audit for the Dryden Forest was submitted on February 7, 2005 and approved March 8, 2005. The Action Plan Status Report was submitted on March 8, 2007. Table 6 provides the audit team's assessment.

Table 6. Audit team assessment of achievement of the 2003 IFA recommendations.

Recommendation from the 2003 Dryden Forest IFA		Summary	Audit Team Assessment
1	The planning team is to increase efforts to engage the LCAC in the identification and analysis of management alternatives in all future management plans.	The planning team involved the LCAC in the identification and analysis of management alternatives for the 2006-2011 FMP through joint meetings. LCAC invited to participate in modeling sessions. An LCAC member was also on the planning team.	Completed.
2	The supplementary documentation for AOCs is to include all public comments, as well as a description of how they were addressed in the proposed prescription.	Public comments are included as part of the AOC record contained in the Supplementary Documentation.	Completed.
3	Future FMPs are to clearly define the distribution of ecosites on the Dryden Forest.	The 2006-2011 FMP describes ecosite distributions.	Completed.
4	The DFMC should verify the 2001 FRI and compare it against that used in the 2001 FMP to determine its accuracy and clearly identify significant changes.	A supplemental document comparing the new FRI to the old FRI demonstrated that the basic assumptions used in the 2001-2006 FMP were valid.	Completed.
5	The DFMC should ensure that future FMPs adequately describe the current forest structure and composition, describe site-specific habitat conditions, define the desired future forest condition, and discuss the implications of current forest conditions on the management of the Dryden Forest.	The 2006-2011 FMP is a considerable improvement over the 2001-2006 FMP in all aspects. The forest description was particularly well done.	Completed.
6	Future FMPs for the Dryden Forest are to more clearly express objectives and targets, employ and fully describe locally developed management strategies consistent with the FMPM, and fully assess a reasonable range of management alternatives.	2006-2011 FMP is comprehensive and assessed a reasonable range of management alternatives.	Completed.

Continued on next page.

Table 6 continued.

Recommendation from the 2003 Dryden Forest IFA		Summary	Audit Team Assessment
7	The DFMC should submit the list of required alterations with additional columns that briefly explain the alteration that was made to the plan and the page number or location of the alteration.	The list had the required commentary.	Completed.
8	The Regional Director is to ensure that FMPs meet all the requirements of the Crown Forest Sustainability Act and the Forest Management Planning Manual for Ontario's Crown Forests.	Two action items and associated tracking procedures were developed to address this recommendation. The tracking procedures included a comprehensive series of checkpoints and accompanying progress reporting. All have been completed.	Completed.
9	The DFMC should provide the General Manager with additional resources to meet the planning, operational, and monitoring needs of the Dryden Forest.	The General Manager has the support of one full time employee and during peak periods (e.g. planning periods) has additional help from hired consultants. DFMC also employs part time help for administration and contracts out field work as needed. A cooperative relationship exists between DFMC and MNR and MNR provides help with forest management tasks.	Completed.
10	The DFMC, its shareholders, and the overlapping licensees are to implement the compliance plan more effectively.	Compliance program is effective.	Completed.
11	The DFMC is to submit compliance reports that provide descriptive information on the operation being monitored and the findings of the inspection.	The compliance reports provide the required details and context.	Completed.
12	The DFMC is to ensure that past and current silvicultural records are accurately documented within the new forest inventory, so that silviculture effectiveness monitoring can be completed and reported on as required.	The inventory for the 2006-2011 FMP was updated with over 7000 ha of ground-based FTG information.	Completed.
13	The DFMC is to rationalize significant landbase changes in the FMPs, trends analysis and RPFO.	Changes to the landbase were rationalized in the 2006-2011 FMP although the changes were not significant. The 2001-2006 FMP had 195,650 ha Productive forest and 311,950 ha total area while the 2006-2001 FMP shows 188,873 ha productive forest and 307,107 ha total area.	Completed.
14	The SFL for the Dryden Forest should be amended to increase the forest renewal trust account minimum balance provisions to \$900,000.	MNR did not change the minimum balance. The SFL was amended to clarify the meaning of minimum balance.	Completed.
15	The Minister of Natural Resources should extend the Sustainable Forest License (No. 542444) for the Dryden Forest for a further five years.	The Sustainable Forest License (No. 542444) for the Dryden Forest was extended. Term of new SFL now April 1, 2003 to March 31, 2023.	Completed.

Forest Renewal Trust

In Ontario, SFL holders are required to make payments into the Forest Renewal Trust based on assessed forest renewal charges. The Trust provides for long term, sustainable funding of eligible silviculture work for Crown forests that have been harvested. Each cubic metre of wood harvested in the province is subject to this renewal charge.

Applicable charges have been paid to the Forest Renewal Trust account and the minimum balance has been maintained each year during the audit term. The previous audit did recommend that the minimum annual balance be increased to \$900k but no change was required by MNR.

DFMC has maintained an organized record of Forest Renewal Trust eligible silviculture work completed during the audit term. Maps and detailed billing information were available for each of the treatments. A sample of the various activities reported as carried out was also viewed during the audit. There were no noted deviations from what was documented by DFMC. As part of the field audit, the audit team randomly selected and examined 32.9% of the area representative of the various activities reported as carried out in the year of the Specified Procedures Report. No deviations were found.

An analysis of the Forest Renewal Trust charges for the Dryden Forest was provided by DFMC to MNR in March, 2007 to apply for a reduction of charges from \$5.00 to \$4.00 per cubic meter for conifer and from \$2.00 to \$0.75 per cubic meter for hardwood. The reductions were approved. The analysis included the current and minimum fund balance, a renewal budget and planned harvest rates for 2007, and a calculation of proposed revenues and the trust fund balance that would result from adopting the new rates. The analysis is appropriate based on plans in the FMP, AWS, and the balance of the account at the time. However, as has been stated in several prior sections, the competition control program planned and implemented on the Forest is inadequate. This is highlighted in this analysis as there is no budget for tending of any kind.

Silviculture Standards and Assessment Program

With the exceptions noted in this report, DFMC is meeting its contractual obligations related to silvicultural standards as described in the SFL. Renewal treatments were good however tending problems were found as described earlier in this report. The audit team views this finding as significant and has developed Recommendation 7 and Recommendation 13 to address this concern.

Aboriginal Opportunities

DFMC met the obligations of the SFL related to working co-operatively with MNR and local Aboriginal communities in order to *identify and implement ways of achieving a more equal participation by Aboriginal communities in the benefits provided through forest management planning*. As per Appendix F of the SFL, two Aboriginal communities and one Aboriginal-owned business are licensed to conduct harvesting operations on the Dryden Forest, in accordance with the approved forest management plan, through Overlapping Forest Resource Licences. DFMC provides the communities with an annual supply (all species) equivalent to a specified percentage of the available harvest area (AHA): Eagle Lake First Nation 4.37%; and the Aboriginal Peoples of Wabigoon 5.00%. An additional license is also held by Noopiming Anokeewin Inc., an Aboriginal business owned by a member of Wabigoon Lake Ojibway Nation, which is licensed to harvest up to 3.74% of the AHA. A majority of its employees are members of the Community and it has provided training to First Nation members. MNR does not officially recognize this private enterprise as Aboriginal for Condition 34 requirements because it is not community-owned, however, it is reported on in Condition 34 reports. Aboriginal licensees are also responsible for activities associated with the harvesting opportunities including road maintenance, slash piling, and water crossing installations. Table 7 presents the forecasted area and volume allocations of Aboriginal licensees for the five-year terms of the 2001-2006 and 2006-2011 FMPs.

Table 7. Forecasted area and volume allocations of Aboriginal licensees for the first five-year period associated with both the 2001-2006 FMP and the 2006-2011 FMP.

Licensee	Allocation	2001-2006 FMP		2006-2011 FMP	
		Area (ha)	Volume (m ³)	Area (ha)	Volume (m ³)
Eagle Lake First Nation	4.37 %	287	38,124	319	36,010
Noopiming Anokeewin Inc.	3.74 %	252	33,503	238	31,647
Aboriginal Peoples of Wabigoon	5.00 %	331	43,900	278	41,466

Sources: 2001-2006 FMP Table FMP-23 and 2006-2011 FMP Table FMP-23.

DFMC also supports the community-owned tree seedling nursery Wabigoon Anishnaabe Gitigewin, located in Wabigoon Lake Ojibway Nation, by contracting the growing of a portion of their tree planting program's seedling requirements annually. DFMC also issued a letter of support to Wabigoon Lake Ojibway Nation to assist with the rebuilding of the tree nursery after the roof collapsed under a heavy snow-load in early 2005. Cone collection was also performed by Aboriginal individuals during the audit term.

Compliance Planning and Monitoring

The DFMC prepared compliance plans that meet the contractual obligations as specified in the SFL. The Company managed to meet its planned inspections. There has been a considerable effort placed on training and certifying compliance inspectors which has led to marked improvements in the quality of inspections and reporting compared to the situation observed during the previous IFA.

Forestry Operations on Mining Claims

There were no concerns regarding operations on mining claims on the Dryden Forest. Upon receipt of the approved annual work schedule each year, MNR notified mining claim holders if forestry operations were proposed to occur proximate to an area under claim. Claim holders were contacted in writing and provided with a map of the proposed operations. Claim holders were instructed to contact DFMC with any concerns regarding the timing of activities, and to contact Dryden District MNR with any other specific concerns.

3.8.2 Concluding Recommendation

Recommendation 20: The audit team concludes that, with critical exception noted below, management of the Dryden Forest was in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, the Forest was managed in compliance with the terms and conditions of the Sustainable Forest Licence held by Dryden Forest Management Limited, and forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol. The critical exception is as follows: Tending is needed in many renewal areas that were seeded or planted and some naturally regenerating stands to ensure conifer dominance is maintained as per FMP objectives. In the near absence of a competition control program, the Desired Future Forest Condition described in the 2006-2011 FMP will not be achieved. Therefore, the audit team recommends the Minister extend the term of the Sustainable Forest Licence 542444 for a further five years, only upon confirmation that the following condition has been satisfied: DFMC must ensure that all stands operated during the audit term that require or are expected to require competition control be treated by the end of the 2010 growing season.

4.0 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

This section provides a summary of conclusions and recommendations for the 2008 Independent Forest Audit of the Dryden Forest for the five-year period from April 1, 2003 to March 31, 2008. The audit assesses the implementation of the last three years of the 2001-2006 FMP and the first two years of the 2006-2011 FMP, including its planning process and approval. The audit team concludes that, with critical exception noted below, management of the Dryden Forest was in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, the Forest was managed in compliance with the terms and conditions of the Sustainable Forest Licence held by Dryden Forest Management Limited, and forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol. The critical exception is as follows: Tending is needed in many renewal areas that were seeded or planted and some naturally regenerating stands to ensure conifer dominance is maintained as per FMP objectives. In the near absence of a competition control program, the Desired Future Forest Condition described in the 2006-2011 FMP will not be achieved.

Therefore, the audit team recommends the Minister extend the term of the Sustainable Forest Licence 542444 for a further five years, only upon confirmation that the following condition has been satisfied: DFMC must ensure that all stands operated during the audit term that require or are expected to require competition control be treated by the end of the 2010 growing season.

The report provides 20 recommendations directed to the responsible parties as follows: 12 to DFMC; two to District MNR; two jointly to DFMC and the District MNR, three to Corporate MNR, and a final recommendation regarding licence extension. Table 8 is a summary of the recommendations directed towards DFMC and/or Dryden District MNR. Table 9 provides a summary of the recommendations directed towards Corporate MNR.

Table 8. Summary of recommendations directed towards DFMC and/or District MNR.

Principle 1: Commitment	
None	
Principle 2: Public Consultation and Aboriginal Involvement	
Recommendation 1: District MNR must ensure that the LCAC terms of reference meets the content requirements of the 2004 FMPM, specifically dates of member's appointment and background material and training required to assist committee members with their roles and responsibilities and forest management planning matters.	
Recommendation 2: District MNR must ensure that documentation and records of public information centres clearly demonstrate that the information made available to the public meets FMPM requirements.	
Principle 3: Forest Management Planning	
Recommendation 4: DFMC must develop operational planning and operator training tools designed to enhance the protection of sensitive sites for the next FMP.	
Recommendation 5: DFMC must ensure that Forest Operations Prescriptions are updated in the AWS prior to operations commencing.	
Principle 4: Plan Assessment and Implementation	
Recommendation 6: DFMC must ensure that the natural benchmark for the 2011-2021 FMP reflects natural conditions.	
Recommendation 7: DFMC must amend the 2006-2011 FMP to increase the amount of planned tending to a level appropriate to reach the desired future forest condition.	
Recommendation 8: DFMC and District MNR must ensure that the 2011-2021 FMP post-renewal forest unit transitions reflect actual results from the Forest.	
Recommendation 9: DFMC must enhance its efforts at operational training and compliance monitoring to further reduce the incidence of site damage due to compaction on fine textured soils.	
Recommendation 10: District MNR and DFMC must review chipper debris management practices to reduce fire risk and the loss of productive forest land.	
Recommendation 11: DFMC must ensure that the planting program is sufficiently supervised and planting errors are minimized.	
Recommendation 12: DFMC must ensure that productive area recovered through slash management is renewed.	
Recommendation 13: DFMC must ensure that all stands operated during the audit term that require or are expected to require competition control be treated by the end of the 2010 growing season.	
Recommendation 14: District MNR must ensure that the aggregate pit under Permit No. 99145 is operating in conformance with all conditions of the permit and that working faces are sloped when the pit is operationally inactive.	
Principle 5: System Support	
None	
Principle 6: Monitoring	
Recommendation 17: DFMC must develop and implement a systematic program for assessing silviculture treatments in advance of FTG surveying.	
Recommendation 18: DFMC must ensure all Annual Reports are complete, accurate and clear.	
Principle 7: Achievement of Management Objectives and Forest Sustainability	
Recommendation 19: DFMC must ensure that recommendations are developed in the determination of sustainability in annual reports where improvements are warranted.	
Principle 8: Contractual Obligations	
Recommendation 20: The audit team concludes that, with critical exception noted below, management of the Dryden Forest was in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, the Forest was managed in compliance with the terms and conditions of the Sustainable Forest Licence held by Dryden Forest Management Limited, and forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol. The critical exception is as follows: Tending is needed in many renewal areas that were seeded or planted and some naturally regenerating stands to ensure conifer dominance is maintained as per FMP objectives. In the near absence of a competition control program, the Desired Future Forest Condition described in the 2006-2011 FMP will not be achieved. Therefore, the audit team recommends the Minister extend the term of the Sustainable Forest Licence 542444 for a further five years, only upon confirmation that the following condition has been satisfied: DFMC must ensure that all stands operated during the audit term that require or are expected to require competition control be treated by the end of the 2010 growing season.	

Table 9. Summary of recommendations directed towards Regional and/or Corporate MNR.

Principle 1: Commitment
None
Principle 2: Public Consultation and Aboriginal Involvement
None
Principle 3: Forest Management Planning
Recommendation 3: Corporate MNR must review the FRI and FMP cycles to ensure they are properly synchronized.
Principle 4: Plan Assessment and Implementation
None
Principle 5: System Support
None
Principle 6: Monitoring
Recommendation 15: Corporate MNR must consider an independent review of forest effects monitoring programs.
Recommendation 16: Corporate MNR must review its document control process for its website postings of its annual report tables AR-12 and AR-13.
Principle 7: Achievement of Management Objectives and Forest Sustainability
None
Principle 8: Contractual Obligations
None

**APPENDIX A – COMPARISON AND TREND ANALYSIS OF PLANNED VS. ACTUAL FOREST
OPERATIONS REPORT**

Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

for the

Dryden Forest

2008 Independent Forest Audit

Prepared by: Jack B. Harrison R.P.F.
Date: July 17, 2008

J. B. Harrison



Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report for the Dryden Forest

2008 Independent Forest Audit

Introduction

As a requirement for holding a Sustainable Forest Licence (SFL) in Ontario an Independent Forest Audit will be performed every five years. As part of the Independent Forest Audit, a Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report is required to be completed by the Dryden Forest Management Co. Ltd. (DFMC) for the Dryden Forest. Appendix "C" of the 2008 Independent Forest Audit Process and Protocol outlines the requirements that this report will follow.

The Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report for the Dryden Forest covers three Forest Management Plans; 1997-2002 Forest Management Plan (FMP), 2001-2006 Forest Management Plan and the 2006-2011 Forest Management Plan.

The 1997-2002 Forest Management Plan (FMP) was authored by Patrick Corbett R.P.F.; OMNR Area Forester on the Dryden Crown Management Unit. The FMP was prepared in accordance with the terms of the Timber Management Planning Manual for Crown Lands in Ontario and the 1997 phase-in requirements for the Forest Management Planning Manual for Ontario's Crown Forests (FMPM).

On June 10th, 1998 a Sustainable Forest Licence was issued to the DFMC which effectively transferred forest management planning responsibilities over to the private sector. In the fall of 1999 DFMC, with the approval of the OMNR, initiated an early renewal of the FMP. This in effect shortened the operational life of the 1997-2002 Forest Management Plan to four years as a new Forest Management Plan began on April 1, 2001.

The 2001-2006 FMP and the 2006-2011 FMP were written by the DFMC, with Jack Harrison R.P.F., General Manager of DFMC as the Plan Author. The DFMC is currently operating in the third year of the 2006-2011 FMP.

In completing the following required tables, DFMC would like to inform the reader that all figures stated as "actual" for the Dryden Forest 2006-2011 FMP are based on available information, which consists only of the first year of operation; the 2006-2007 Annual Report.

Summary of Total Area Under Management

Table 1 of the Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report for the Dryden Forest summarizes the land types on the Dryden Forest over the three five-year periods.

Several working groups were not consistently represented throughout the entire fifteen year planning period so it was necessary to combined them with similar working groups as noted in the footnotes.

There is an error of 360 ha. in the Sp Production Forest Regular column for the 1997-2002 Table 4.8.2, which led to some confusion over the correct totals. An assumption has been made that Table 4.9 has the correct area for the Sp working group and the Sp Subtotal area in 4.8.2 is indeed 35,055 ha.

Overall Total Production Forest remained relatively stable over the fifteen year planning period with only a 1.5 % reduction in area. Fluctuations in the total Production Forest were associated with the acquisition/disposal of Crown-owned Patent Land and the creation of additional parks/conservation reserves through Ontario Living Legacy.

Total Forested Land declined over the fifteen year period due to an increase in the Non-Forested Land through expansions in the utility and aggregate sector. B&S/NSR area was reduced significantly as backlogged Free To Grow Surveys were completed in the 1980 burn.

There were some significant increases in the working group areas over the fifteen year period mainly due to the decrease in B&S/NSR area. Red Pine forest unit area increased significantly (220 ha.) due to consistent program of planting red pine. Jack Pine and White Birch forest unit area increased significantly (15,088 ha. & 785 ha. respectively) between the first and second past plans due to the classification of a large amount of the 1980 burn as Free to Grow. Other Conifer working group increased significantly (1308 ha.) with the completion of the Free To Grow surveys.

The only working group area that declined significantly was the Balsam Fir working group, which decreased dramatically (2562 ha.) over the first ten year term due to the spruce budworm infestation from 1979 to 1996, which killed most of the mature balsam fir in the entire forest.

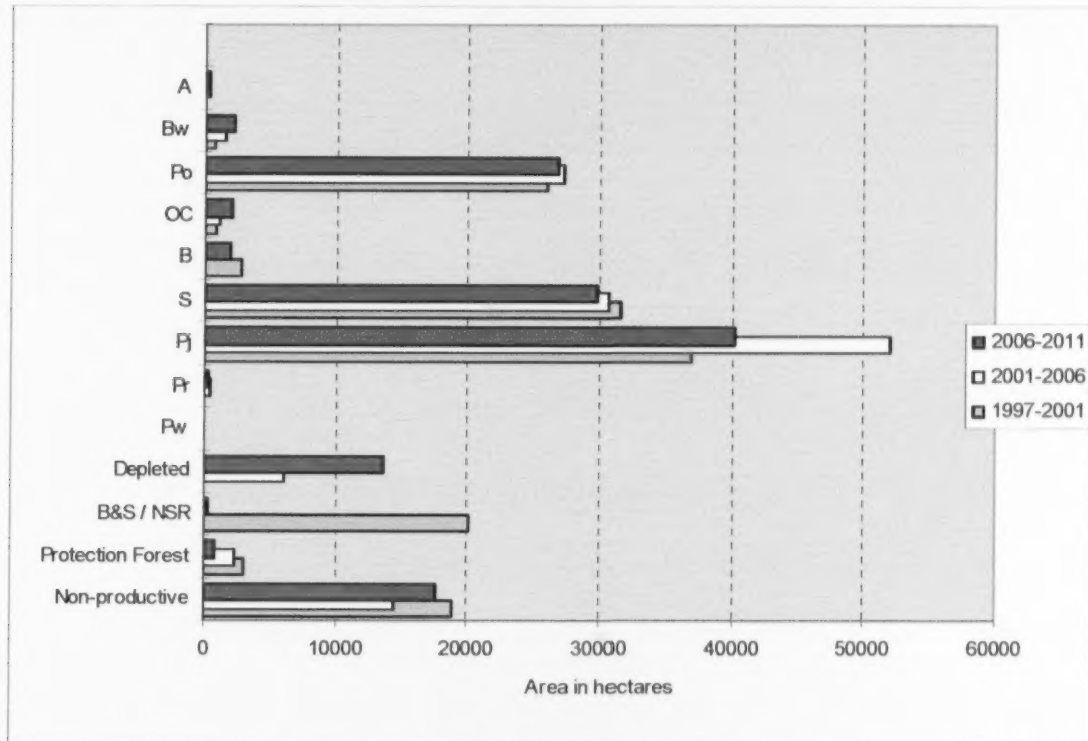
Poplar and Spruce working groups remained stable during the fifteen year planning period.

2008 Independent Forest Audit
Table 1 - Summary of Total Area Under Management

Past and Current Plans - Crown Managed

MU: Dryden Forest

Land Type	Plan Term	Area in hectares		
		Past Plans		Current
		1997-2001	2001-2006	2006-2011
Non-Forested				
Other Land		2,402	3,835	3,388
Forested				
Non-productive		18,919	14,412	17,630
Productive				
Protection		2,976	2,372	782
Production Forest				
B&S / NSR / Below Regen Standard		20,117	3	222
Depleted / Recent Disturbance		-	6,063	13,557
Forest Stands by Working Group or Provincial Forest Type				
Pw		70	68	69
Pr		120	408	340
Pj		36,885	51,973	40,139
S		31,571	30,683	29,883
B		2,687	125	1,955
OC		824	1,041	2,132
Po		26,043	27,261	26,885
Bw		682	1,467	2,147
A		161	212	217
Total Production Forest		119,160	119,305	117,544
Total Forested Land		141,055	136,089	135,956



Source: Dryden Forest 1997-2002 FMP Table 4.8.2 & 4.9

Dryden Forest 2001-2006 & 2006-2011 FMP Table FMP 1

Notes: A & OH are combined

Sp, Sw & Sb are combined

OC, L & Ce are combined

An error in the Sp Regular Production Forest for the 1997-2002 Table 4.8.2 was ignored assuming Table 4.9 is correct.

Description of Forest Units

The protocol requirement for Table 2 – Description of Forest Units, requires the use of one table for each of the 3 five-year planning terms.

Table 2a describes the forest units utilized in the 1997-2002 FMP. In the 1997-2002 FMP Table 4.11 Silviculture Ground Rules were based on ten "Treatment Units", however 8 forest units were utilized in the Strategic Forest Management Model (SFMM) and the basis for harvest allocations so, as in the past audit, it was decided to use the Forest Units as described in Section 12. Maximum Allowable Depletion (pg. 98-99) of the 1997-2002 FMP to complete Table 2.

2008 Independent Forest Audit

MU: Dryden Forest

Table 2a - DESCRIPTION OF FOREST UNITS (1997-2002 FMP)

Forest Unit		Forest Type	Main Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria
Code	Name					
PO1	Poplar	Deciduous	Poplar	N/A	Clearcut	N/A
BFI	Balsam fir	Conifer	Balsam fir	N/A	Clearcut	N/A
Pj1	Jack pine	Conifer	Jack pine	N/A	Clearcut	N/A
SpX1	SpruceX1	Conifer	Spruce	N/A	Clearcut	N/A
Sp234	Spruce234	Conifer	Spruce	N/A	Clearcut	N/A
PWR	White/red pine	Conifer	Red/White Pine	N/A	Pr - Clearcut Pw-Shelterwood	N/A
Oc1	Other conifer	Conifer	Cedar & Larch	N/A	Clearcut	N/A
Oh1	Other hardwoods	Deciduous	white birch & ash	N/A	Clearcut	N/A

Source: Dryden Forest 1997-2002 FMP pg 98-99

Table 2b describes the forest units utilized in the 2001-2006 FMP. Forest stands were aggregated into twelve forest units to facilitate forest management planning. Forest units now provide the foundation for both the silviculture ground rules and the harvest allocations.

2008 Independent Forest Audit

MU: Dryden Forest

Table 2b - DESCRIPTION OF FOREST UNITS (2001-06 FMP)

Forest Unit		Forest Type	Main Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria	Additional Information
Code	Name						
PR1	Red Pine	Conifer	Red Pine	ES 11, 15, 18, 24	Clearcut	Pr > 0.7	Red pine dominated stands
PRW	Red and White Pine	Conifer		ES 11, 15, 18, 24	Shelterwood	Pw + Pr > 0.4	Fire origin present stands and intensively managed plantations
OC1	Cedar and Larch	Conifer	Cedar	ES 17, 36, 37	Clearcut	Ce+La > 0.5 or WG = "Ce" or WG = "La" and Pr+Pw+Pj+Sw+Bw < 0.1	Red and white pine dominated sites. Old growth potential
SBL	Lowland Spruce	Conifer	Black spruce	ES 34, 35, 36, 38	Clearcut	(Sb+Ce+La > 1 and (SC = "3" or SC = "4")) or (Sb+Ce+La = 1 and Ce+La > 0.1 and (SC = "1" or SC = "2"))	Cedar and Larch dominated stands.
SPU	Upland Spruce	Conifer	Spruce All	ES 12, 20, 22, 25, 31	Clearcut	Sb+Sw > 0.7 and Po+Bw < 0.2	Lowland spruce, usually organic soils.
PJ1	Jack Pine	Conifer	Jack Pine	ES 12, 13, 14, 20, 26	Clearcut	Pj > 0.7 and Po+Bw < 0.2	Upland spruce, usually mineral soil. White spruce component in some stands.
PO1	Poplar	Intolerant Hardwoods	Poplar	ES 16, 19, 23, 28, 29, 33	Clearcut	Po > 0.7 or Bw > 0.6 and Po+Bw > 0.7	Predominately pure jack pine stands on shallow to deep sites
OH1	Lowland Hardwoods	Tolerant Hardwoods	Ash	ES 30, 38	Clearcut	Mh+Uh+Lh > 0.3	Poplar stands, on mainly moderate to deep sites.
MC1	Conifer Mixedwood	Mixed Wood		ES 14, 20, 21, 22, 25, 26, 31, 32, 26	Clearcut	Pr+Sb+Pj+Sw+Bf > 0.7 and Bf < 0.3 and Po+Bw < 0.2	Lowland black ash and other hardwoods.
BFI	Balsam Fir	Conifer	Balsam Fir	ES 21, 27, 32	Clearcut	Bf > 0.4 and Bf+Sw+Sb+Pj > 0.5	Conifer dominated mixedwood
MC2	Conifer/Hwd Mix	Mixed Wood		ES 14, 20, 21, 22, 25, 26, 31, 32, 36	Clearcut	Pw+Pr+Sb+Sw+Bf+Pj+Ce+La > 0.5	Balsam fir stands. Understory and regeneration predominately balsam fir. Fire and insect concerns.
IHM	Intolerant Hwd Mix	Intolerant Hardwood	Poplar	ES 16, 19, 23, 28, 29, 33	Clearcut	Po+Bw+Mh+Uh+Lh > 0.5	Conifer mixedwood. Distinguishable from hardwood stands, more hardwood than MC1.

Source Dryden Forest 2001-06 FMP Table FMP-8

Dryden Forest – Independent Forest Audit 2003-2008
Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

Table 2c represents the forest units used in the 2006-2011 FMP. One additional forest unit; CE1 was added to capture upland cedar areas that have the potential for white pine rehabilitation.

2008 Independent Forest Audit

MU: Dryden Forest

Table 2c - DESCRIPTION OF FOREST UNITS (2006-11 FMP)

Forest Unit		Forest Type	Main Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria
Code	Name					
BF1	Balsam Fir Dominant	Mixedwood	Balsam Fir	ES 27, 21, 12, 32, 29	Clearcut	SORT ORDER 11: (((bf]>40) and ([bf]+[sw]+[sb]+[p]>=50))
CE1	Cedar Mix Upland	Conifer Lowland	Cedar	ES 17, 37	Clearcut	SORT ORDER 5: (((ce]>= 50) or ([Wg] = "CE")) and ([Sw]<= 30 and ([Bf]<= 30)))
IHM	Intolerant Hardwood Dominated Mixedwood	Mixedwood	Poplar	ES 29, 19, 33, 16, 30, 12, 23, 21, 20, 28	Clearcut	SORT ORDER 13: ([po]+[bw]+[mh]+[ab]+[Pb]+[Ms]>=50)
MC1	Mixed Conifer Dominant Mixedwoods	Mixedwood	Jack Pine	ES 12, 21, 20, 25, 26, 13, 14, 22, 32, 31, 11, 27, 15	Clearcut	SORT ORDER 10: (((PR]+[pw]+[SB]+[SW]+[PJ]+[BF] >= 70) AND ([BF] <= 30) AND ([PO]+[BW] <= 20)
MC2	Conifer leading Hardwood Mixedwood	Mixedwood	Jack Pine	ES 29, 21, 12, 19, 25, 26, 27, 14, 33, 20, 32, 22, 23, 16, 30	Clearcut	SORT ORDER 12: ([pw]+[pr]+[sb]+[sw]+[bf]+[pj]+[ce]+[la]>= 50)
OCL	Other Conifer Lowland	Conifer Lowland	Other Conifer	ES 37, 36	Clearcut	SORT ORDER 3: (((ce]+[la]>=50) or (([wg]="ce") or ([wg]="la") and ([pr]+[pw]+[p]+[sw]+[bw]<=10))) and ([Ecosite1] <> "NW17*")
OH1	Other Hardwood Mixed	Mixedwood	Black Ash	ES 38, 33	Clearcut	SORT ORDER 9: ([Ms]+[Mh]+[Ab] >= 30)
PJ1	Jack Pine Dominated	Conifer Upland	Jack Pine	ES 20, 13, 25, 12, 21, 14, 29, 19, 26, 22, 31	Clearcut	SORT ORDER 7: (((pj]>=70) and ([po]+[bw]<=20))
PO1	Aspen Dominted	Poplar	Poplar	ES 29, 19, 33, 23, 16, 28, 30, 25, 12	Clearcut	SORT ORDER 8: ([po]>=70)
PR1	Pure Red Pine	Red & White Pine	Red Pine	ES 15, 18, 29	Clearcut	SORT ORDER 2: (((pr]>=70) or ([wg] = "PR"))
PRW	Red and White Pine Mixed	Red & White Pine	White Pine	ES 18, 11, 24	Clearcut	SORT ORDER 1: (((pw]+[pr]>=40) and ([pw]>=1))
SBL	Black Spruce Lowland	Conifer Lowland	Black Spruce	ES 36, 35, 34, 37	Clearcut	SORT ORDER 4: (((SB]+[CE]+[LA] >= 80) and ([Ecosite1] = "NW34*") or ([Ecosite1] = "NW35*") or ([Ecosite1] = "NW36*") or ([Ecosite1] = "NW37*"))
SPU	Spruce Dominated Uplands	Conifer Upland	Black Spruce	ES 26, 22, 20, 31, 12, 21, 27, 32, 29, 25, 13	Clearcut	SORT ORDER 6: (((SB] + [SW] >= 70) and ([PO] + [BW] <= 20))

Source: Dryden Forest 2006-11 FMP Table FMP-8

Summary of Planned & Actual Harvest Volumes

Table 3 – Summary of Planned & Actual Harvest Volumes indicates Planned Harvest Volumes were relatively high during the 1997-2002 FMP. This is considered to be a result of the concentrated harvest of high-volume jack pine stands in the "checkerboard" sand flats in an attempt to establish a more natural disturbance pattern on the forest.

Depletions in the 1997-2002 FMP were at 85% of planned levels, while volumes were at 81% of planned levels, which suggests planned volumes were slightly higher than actual.

Similarly depletions in the 2001-2006 FMP were at again at 85% of planned levels, while volumes were at 79% of planned levels, which suggests planned volumes were slightly higher than actual.

As there is only information on one year of the 2006-2011 FMP, it is too early to compare planned vs. actual harvest volumes.

Species such as Cedar, Black Ash and Larch do not realize their full utilization as they are not sought after by the forest industry and there is a limited local use.

2008 Independent Forest Audit

Table 3 - Summary of Planned & Actual Harvest Volumes

MU: Dryden Forest

Average Planned Annual Harvest Volumes

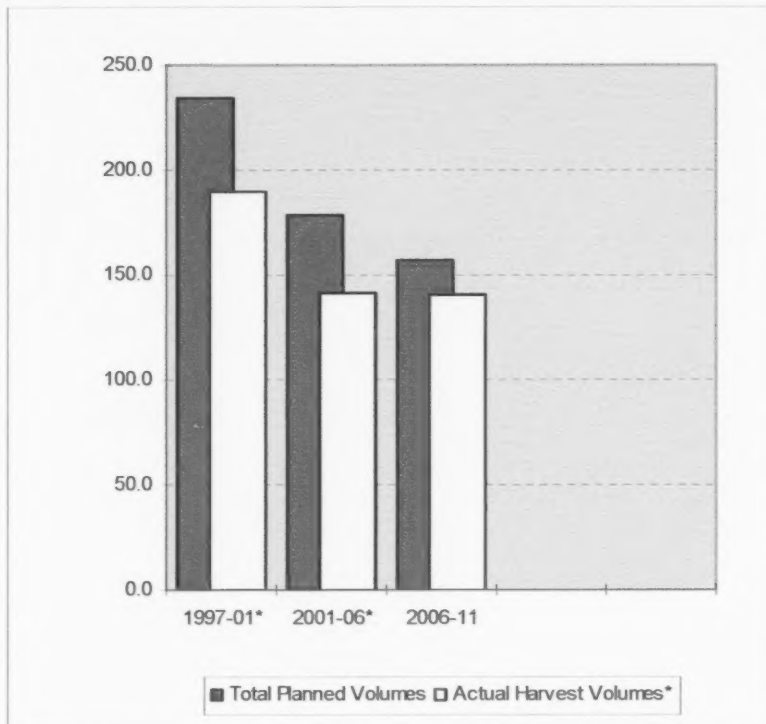
Volumes are Annualized for the indicated 5 year period

Species	Volume in cubic metres		
	Past Plans		Current
	1997-01	2001-06	2006-11
Pw	717	98	0
Pr	632	1,126	0
Pj	98,638	64,487	60,432
Sp	61,166	41,964	49,477
Bf	8,479	6,174	5,982
OC	206	1,106	1,367
Po	59,103	58,655	33,630
Bw	5,445	4,551	6,211
A	324	0	49
Total Planned Volumes	234,710	178,161	157,148

Actual Harvest Volumes

Volumes are Annualized for the indicated 5 year period

Species	Volume in cubic metres		
	Past Plans		Current
	1997-01	2001-06	2006-11
Pw	0	0	0
Pr	168	575	0
Pj	103,888	72,950	83,166
Sp	42,792	31,437	24,209
Bf	2,806	148	1,004
OC	49	28	145
Po	39,370	36,393	31,685
Bw	365	68	445
A	0	0	0
Total Actual Volumes	189,438	141,599	140,654



Sources: Planned: 1997-2002 FMP Table FMP-21, 2001-2006 FMP Table FMP-23, 2006-2011 FMP Table FMP-23
Actual: 1997-2001 RPFO Table RPFO-4, 2005-2006 AR Table AR-4 and 2006-2007 AR Table AR-4

Summary of Planned & Actual Depletion Area

Table 4 – Summary of Planned & Actual Depletions Area compares the planned Annual Harvest Area with the Actual Annual Depletion Area.

Planned Annual Harvest dropped approximately 13% between the 1997-2002 and 2001-2006 FMP and then dropped slightly (4%) between the 2001-2006 FMP and the current planning term. SFMM analyses indicated that 50% (100 ha./yr.) of the decline in the Planned Annual Harvest is directly attributed to the application of the Forest Management Guidelines for the Provision of Marten Habitat, which places planning restrictions on mature stands of conifer. Other factors that caused the reduction in the Available Harvest Area were considered to be: the creation of additional parks/conservation reserves through Ontario Living Legacy, additional wildlife habitat constraints and a more refined SFMM model.

There is a trend of a stable utilization of the available harvest area as the % of Actual vs. Planned is 85% (97-2001), 85% (01-2006) and 75% (06-2011) over the course of the three planning terms. This trend has come about by the steady demand for all species in the last fifteen years and the fact that the Dryden Forest Management Co. fully allocates the available harvest area to the Shareholders and the Overlapping Licensees giving them the opportunity to take advantage of short-term wood demands. Full utilization is unlikely as Cedar, Black Ash and Larch are not in demand locally.

2008 Independent Forest Audit

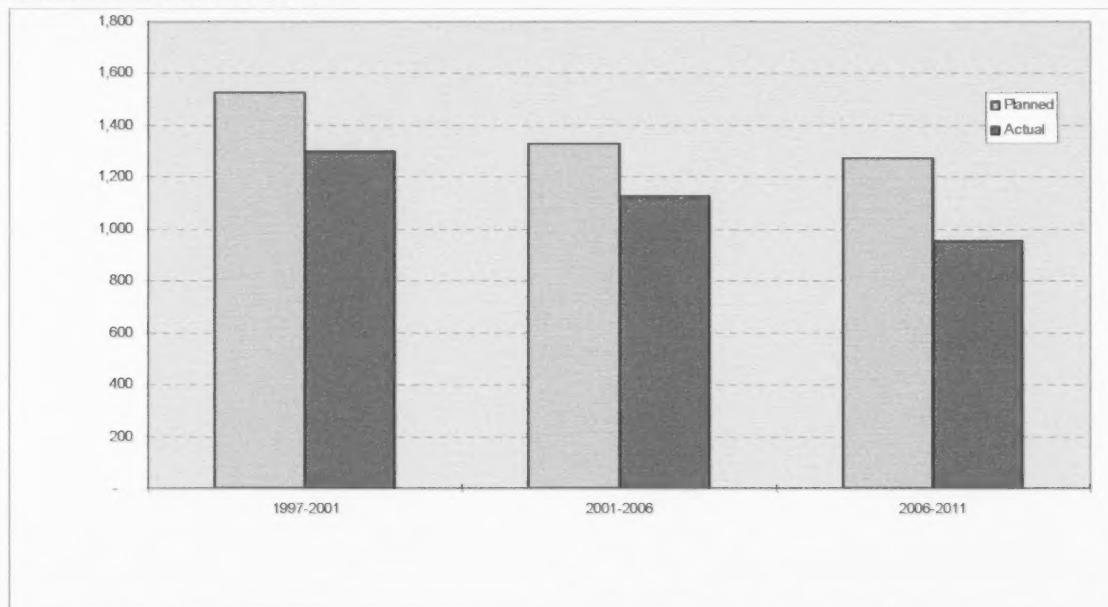
Table 4 - Summary of Planned & Actual Depletion Area
Past and Current Plans

MU: Dryden Forest

Area is Annualized for the indicated 5 year period

Planned Annual Harvest Area				Actual Depletion Area					
Area in hectares				Area in hectares					
Past Plans		Current		Past Plans				Current	
Plan Term	1997-2002	2001-06	2006-11	1997-2001		2001-06		2006-11	
Forest Unit				Harvest	Natural	Harvest	Natural	Harvest	Natural
BF1	5	5	2	8		5		-	-
ILHM	1	125	161	0		112	13	148	-
MC1		348	344			292	57	130	-
MC2		302	139			265	66	109	-
OC1		28	3			3	-	-	-
OH1		6	1			-	-	-	-
PJ1	800	206	378	675	9	187	32	404	-
PO1	499	141	114	404		127	20	120	-
PR1		2	-			2	-	-	-
PRW	6	-	-	-		-	0	-	-
SBL		4	47			7	0	26	-
SPU	214	161	85	209	1	125	10	17	-
Total Area:	1,525	1,328	1,273	1,296	10	1,125	198	953	-

Planned vs. Actual Harvest Area



Source: Planned: Dryden Forest 1997-2002 TPM Table 4.15; 2001-2006 & 2006-2011 FMP Table FMP-2018

Actual: Dryden Forest 1997-2001 RPFO Table RPFO-201; 2005-2006 AR & 2006-2007 Tables AR-201 and AR-6

Summary of Managed Productive Forest by Forest Unit

Table 5 – Summary of Managed Productive Forest by Forest Unit compares the age class distribution of forest units by area and volume over the fifteen year planning period is represented in three tables; Table 5a (1997-2001), Table 5b (2001-2006) and Table 5c (2006-2011).

In the first of the previous planning terms (1997-2002) the forest was classified into 9 working groups which represented, for the most part, different forest species. The 2001-2006 FMP marked the beginning of a more refined classification utilizing relatively pure stands of forest species and new categories of various combinations of forest species, known as "mixed wood" forest units. 56% of the Production Forest in the 2001-2006 planning period was classified as "mixed wood" forest units which did not exist as a classification in the 1997-2002 FMP.

Figure 1 summarizes age classes over the three five-year planning periods. Barren & Scattered areas have been added to the 1-20 year age class to provide continuity in the analysis.

Figure 1: Age Class Comparison over fifteen year planning period

Age Class	97-2002	01-2006	06-2011
1-20	24,762	20,138	23,335
21-40	10,486	24,220	20,754
41-60	17,640	13,881	13,760
61-80	39,133	32,729	23,023
81-20100	22,631	22,900	27,435
101-20120	3,867	4,794	6,179
121+	641	643	3,058
Total	119,160	119,305	117,544

The first noticeable trend is the increase in the 21-40 age class. This is a result of a large burn moving out of the 1-20 age class and into the 21-40 age class. Another trend is the 21-40 age class gap that was evident in the 97-2002 FMP has moved into the 41-60 age class in the 2001-2006 FMP and 2006-2011 FMP. This is of some concern to sustainable wood flow in the future.

Mature and Over Mature age classes (81+) have all increased in area since the 1997-2002 FMP, due mainly to the leaving of shoreline reserves and pine marten core areas. This trend will aid in the achievement of the objectives in the Old Growth Policy for Ontario's Crown Forests.

Overall the age class distribution is heading towards a balance of age classes with approximately 20,000 ha. per 20-year age class for the first 100 years with a growing amount of wood accumulating in the over mature age classes. This is a positive trend that will provide a sustainable flow of wood, while providing the maximum amount of habitat for wildlife species.

Dryden Forest – Independent Forest Audit 2003-2008
Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

2008 Independent Forest Audit

MU: Dryden Forest

Table 5a - SUMMARY OF MANAGED PRODUCTIVE FOREST BY FOREST UNIT (1997-2001)

Forest Unit	Age Class	Protection Forest		Production Forest				
		Area (ha)	Volume (m3)	Unavailable		Stage of Management	Available	
				Area (ha)	Volume (m3)		Area (ha)	Volume (m3)
PW	141-160					clearcut	70.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		70.0	0.0
PRW	1-20					clearcut	286.0	
	21-40					clearcut	5.0	
	41-60					clearcut	38.0	
	61-80					clearcut	2.0	
	81-100					clearcut	75.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		406.0	0.0
PJ1	1-20					clearcut	17,054.0	
	21-40					clearcut	4,559.0	
	41-60					clearcut	5,431.0	
	61-80					clearcut	16,164.0	
	81-100					clearcut	6,386.0	
	101-120					clearcut	236.0	
	121-140					clearcut	14.0	
	141-160					clearcut		
	161-180					clearcut	2.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		49,846.0	0.0
SP	1-20					clearcut	3,806.0	
	21-40					clearcut	1,674.0	
	41-60					clearcut	2,923.0	
	61-80					clearcut	9,880.0	
	81-100					clearcut	13,227.0	
	101-120					clearcut	3,140.0	
	121-140					clearcut	350.0	
	141-160					clearcut	55.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		35,055.0	0.0
SB	1-20					clearcut	356.0	
	21-40					clearcut		
	41-60					clearcut		
	61-80					clearcut	17.0	
	81-100					clearcut	72.0	
	101-120					clearcut	131.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		576.0	0.0
SW	21-40					clearcut	8.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		8.0	0.0
BF	1-20					clearcut	143.0	
	21-40					clearcut	216.0	
	41-60					clearcut	1,978.0	
	61-80					clearcut	428.0	
	81-100					clearcut	58.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		2,823.0	0.0
CE	81-100					clearcut	70.0	
	101-120					clearcut	22.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		92.0	0.0
L	1-20					clearcut	10.0	
	21-40					clearcut		
	41-60					clearcut		
	61-80					clearcut	16.0	
	81-100					clearcut		
	101-120					clearcut	18.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		44.0	0.0

Dryden Forest – Independent Forest Audit 2003-2008
Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

Forest Unit	Age Class	Protection Forest		Production Forest				
		Area (ha)	Volume (m3)	Unavailable		Stage of Management	Available	
				Area (ha)	Volume (m3)		Area (ha)	Volume (m3)
OC	1-20					clearcut	32.0	
	21-40					clearcut	8.0	
	41-60					clearcut	7.0	
	61-80					clearcut	60.0	
	81-100					clearcut	256.0	
	101-120					clearcut	232.0	
	121-140					clearcut	96.0	
	141-160					clearcut	13.0	
	161-180					clearcut	26.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		730.0	0.0
A	1-20					clearcut	4.0	
	21-40					clearcut		
	41-60					clearcut		
	61-80					clearcut		
	81-100					clearcut	30.0	
	101-120					clearcut	2.0	
	121-140					clearcut	11.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		47.0	0.0
OH	1-20					clearcut	5.0	
	21-40					clearcut		
	41-60					clearcut	4.0	
	61-80					clearcut	50.0	
	81-100					clearcut	46.0	
	101-120					clearcut	10.0	
	121-140					clearcut	4.0	
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		119.0	0.0
PO	1-20					clearcut	2,983.0	
	21-40					clearcut	3,937.0	
	41-60					clearcut	6,944.0	
	61-80					clearcut	12,316.0	
	81-100					clearcut	2,398.0	
	101-120					clearcut	76.0	
	121-140					clearcut		
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		28,654.0	0.0
BW	1-20					clearcut	79.0	
	21-40					clearcut	79.0	
	41-60					clearcut	319.0	
	61-80					clearcut	200.0	
	81-100					clearcut	13.0	
	101-120					clearcut		
	121-140					clearcut		
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		690.0	0.0
TOTAL ALL FOREST UNITS		0.0	0.0	0.0	0.0		119,160.0	0.0

Source:
Dryden Forest 1997-2002 TMP Table 4.9

Dryden Forest – Independent Forest Audit 2003-2008
Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

2008 Independent Forest Audit

MU: Dryden Forest

Table 5b - SUMMARY OF MANAGED PRODUCTIVE FOREST BY FOREST UNIT (2001-06)

Forest Unit	Age Class	Protection Forest		Production Forest				
		Area (ha)	Volume (m3)	Unavailable		Stage of Management	Available	
				Area (ha)	Volume (m3)		Area (ha)	Volume (m3)
PR1	1-20			3.1		clearcut	186.2	
	41-60					clearcut	4.6	542.8
	61-80					clearcut	15.7	2,951.6
	81-100					clearcut	5.2	1,336.4
	Forest Unit Subtotal	0.0	0.0	3.1	0.0		211.7	4,830.8
PRW	1-20			9.0	7.2	clearcut	284.0	116.0
	21-40					clearcut	13.8	496.8
	41-60	12.9	1,560.9	6.1	988.2	clearcut	24.7	3,353.6
	61-80					clearcut	3.6	810.0
	81-100			5.1	1,270.3	clearcut	54.1	14,051.3
	101-120	19.3	5,214.9			clearcut		
	121-140	7.9	1,975.0			clearcut		
	141-160			16.9	3,599.7	clearcut	50.7	10,799.1
	Forest Unit Subtotal	40.1	8,750.8	37.1	5,865.4		430.9	29,626.8
OC1	1-20					clearcut	26.8	
	21-40					clearcut	13.6	57.6
	41-60			34.4	688.0	clearcut	293.1	5,818.8
	61-80			4.9	249.9	clearcut	59.1	3,014.1
	81-100	33.1	2,252.1	39.2	2,915.7	clearcut	288.0	21,889.5
	101-120	32.4	2,851.2	84.3	7,317.8	clearcut	267.9	23,331.6
	121-140	48.0	3,567.0	6.8	521.4	clearcut	77.3	5,854.4
	141-160			5.8	355.4	clearcut	22.2	1,339.1
	161-180	41.6	2,300.8	9.8	548.8	clearcut	15.4	862.4
	Forest Unit Subtotal	155.1	10,971.1	185.2	12,597.0		1,063.4	62,167.5
SBL	1-20	42.4		3.3		clearcut	167.4	
	21-40			13.9		clearcut	107.7	
	41-60			8.7	2.4	clearcut	58.6	26.2
	61-80	33.3	39.6	22.8	501.6	clearcut	101.0	2,281.5
	81-100	150.4	8,276.7	74.2	4,261.5	clearcut	854.9	47,937.6
	101-120	115.9	9,058.0	64.2	4,971.6	clearcut	361.5	28,616.4
	121-140	88.5	8,296.4	23.4	2,183.7	clearcut	66.5	6,200.8
	141-160	29.1	2,589.9			clearcut		
	Forest Unit Subtotal	459.6	28,260.6	210.5	11,920.8		1,717.6	85,062.5
SPU	1-20	6.1		18.3		clearcut	745.8	
	21-40			108.4	490.2	clearcut	456.8	2,307.6
	41-60	15.3	627.3	24.6	929.1	clearcut	393.5	14,681.5
	61-80			220.4	17,122.4	clearcut	2,210.1	167,755.4
	81-100			534.0	61,165.8	clearcut	4,437.9	508,891.5
	101-120	13.2	1,909.2	224.0	32,007.2	clearcut	1,885.4	269,086.4
	121-140			23.3	3,189.2	clearcut	109.5	15,455.0
	141-160			7.2	870.6	clearcut	50.5	6,184.4
	161-180			3.3	372.9	clearcut	18.0	2,034.0
	Forest Unit Subtotal	34.6	2,536.5	1,163.5	116,147.4		10,307.5	986,395.8
PJ1	1-20	77.0		279.1		clearcut	9,396.1	
	21-40	23.5	606.0	747.6	16,398.2	clearcut	5,523.5	134,142.5
	41-60	46.0	4,211.6	124.6	13,141.8	clearcut	1,539.1	161,604.5
	61-80	196.8	30,744.9	562.8	86,948.4	clearcut	7,018.5	1,085,412.9
	81-100	236.6	40,659.6	225.8	38,839.8	clearcut	2,414.7	416,063.2
	101-120	3.9	674.7	30.5	5,274.6	clearcut	258.4	44,171.2
	121-140	8.7	600.3			clearcut		
	Forest Unit Subtotal	592.5	77,497.1	1,970.4	160,602.8		26,150.3	1,841,394.3
PO1	1-20	30.5	213.5	25.6	172.2	clearcut	1,300.2	2,398.2
	21-40			175.4	7,929.8	clearcut	1,860.6	80,162.2
	41-60	40.4	4,592.4	73.2	8,553.4	clearcut	1,117.0	125,140.9
	61-80	73.3	10,775.1	302.9	48,000.1	clearcut	2,284.1	363,482.7
	81-100			140.1	25,881.6	clearcut	827.7	153,092.0
	Forest Unit Subtotal	144.2	15,581.0	717.2	90,537.1		7,389.6	724,276.0

Dryden Forest – Independent Forest Audit 2003-2008
Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

Forest Unit	Age Class	Protection Forest		Production Forest				
		Area (ha)	Volume (m3)	Unavailable		Stage of Management	Available	
				Area (ha)	Volume (m3)		Area (ha)	Volume (m3)
OH1	1-20			2.7		clearcut	5.8	
	21-40			3.1	3.1	clearcut	1.0	1.0
	41-60					clearcut	35.5	426.0
	61-80	2.8	148.4	12.3	595.9	clearcut	41.6	2,004.6
	81-100			21.4	1,427.4	clearcut	110.6	7,841.6
	101-120			7.1	589.3	clearcut	24.2	2,008.6
	121-140			4.8	374.4	clearcut	11.0	858.0
	Forest Unit Subtotal	2.8	148.4	51.4	2,990.1		229.7	13,139.8
MC1	1-20			34.2		clearcut	4,282.8	
	21-40	82.4	1,071.2	299.5	5,902.1	clearcut	2,336.7	55,822.3
	41-60	26.0	1,598.0	212.8	14,689.6	clearcut	2,415.3	170,268.1
	61-80	76.6	8,118.4	583.8	62,475.0	clearcut	7,154.2	756,011.2
	81-100	55.9	7,053.9	670.4	85,613.6	clearcut	6,138.4	782,423.2
	101-120			74.0	10,159.8	clearcut	596.8	81,748.8
	121-140			9.7	875.9	clearcut	48.1	4,298.9
	181-200					clearcut	1.8	91.8
	Forest Unit Subtotal	240.9	17,841.5	1,884.4	179,716.0		22,974.1	1,850,664.3
BF1	1-20			3.4		clearcut	198.1	
	21-40					clearcut	9.8	382.2
	41-60					clearcut	71.3	5,350.5
	61-80					clearcut	30.0	3,180.0
	Forest Unit Subtotal	0.0	0.0	3.4	0.0		309.2	8,912.7
MC2	1-20			97.7		clearcut	2,698.4	
	21-40	9.5	380.0	1,248.0	18,394.8	clearcut	8,781.9	152,807.1
	41-60	102.7	7,975.7	454.9	35,561.3	clearcut	5,019.0	401,384.8
	61-80	184.0	20,394.3	843.6	99,434.1	clearcut	6,669.3	785,294.3
	81-100	128.6	18,842.4	592.0	84,812.5	clearcut	4,149.9	595,185.1
	101-120			98.2	14,460.2	clearcut	793.7	118,226.8
	121-140			5.7	335.1	clearcut	28.2	1,924.5
	Forest Unit Subtotal	424.8	47,592.4	3,340.1	252,998.0		28,140.4	2,054,822.6
IHM	1-20	19.9		7.2		clearcut	362.7	
	21-40	13.9	444.8	331.3	5,105.6	clearcut	2,187.4	35,412.8
	41-60	41.8	3,075.0	177.4	13,983.0	clearcut	1,792.9	142,165.9
	61-80	196.4	27,661.2	644.1	88,864.3	clearcut	3,943.9	535,454.5
	81-100	35.4	5,734.8	228.6	37,250.3	clearcut	1,087.5	177,540.0
	101-120			2.6	371.8	clearcut	21.2	3,031.6
	121-140			0.5	58.5	clearcut	26.9	3,147.3
	Forest Unit Subtotal	307.4	36,915.8	1,391.7	145,633.5		9,422.5	896,752.1
TOTAL ALL FOREST UNITS		2,372.0	246,095.2	10,958.0	979,008.1		108,346.9	8,558,045.2

Source:
Dryden Forest 2001-06 FMP Table FMP-9

Dryden Forest – Independent Forest Audit 2003-2008
Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

2008 Independent Forest Audit

MU: Dryden Forest

Table 5c - SUMMARY OF MANAGED PRODUCTIVE FOREST BY FOREST UNIT (2006-11)

Forest Unit	Age Class	Protection Forest		Production Forest				
		Area (ha)	Volume (m3)	Unavailable		Stage of Management	Available	
				Area (ha)	Volume (m3)		Area (ha)	Volume (m3)
BF1	1-20		0	13.5	65	clearcut	162.5	788
	21-40		0		0	clearcut	296.1	7,121
	41-60		0	128.4	6,555	clearcut	585.9	29,910
	61-80		0	30.8	2,262	clearcut	417.4	30,658
	81-100		0	4.7	384	clearcut	47.1	3,850
	101-120		0		0	clearcut	7.3	536
	121-140		0		0	clearcut		0
	141+		0		0	clearcut		0
	Forest Unit Subtotal	0.0	0	177.4	9,267		1,516.3	72,864
CE1	1-20		0		0	clearcut	20.2	20
	21-40		0		0	clearcut	6.0	59
	41-60		0		0	clearcut	60.2	1,511
	61-80		0	5.70	331	clearcut	266.9	15,477
	81-100		0	23.70	2,132	clearcut	171.9	15,462
	101-120		0		0	clearcut	100.1	10,145
	121-140		0	46.70	4,502	clearcut	77.3	7,452
	141+		0		0	clearcut	74.4	6,659
	Forest Unit Subtotal	0.0	0	76.1	6,964		777.0	56,785
IHM	1-20		0	40	320	clearcut	1,265.4	10,123
	21-40	4.7	207	24	1,036	clearcut	3,106.0	136,975
	41-60	17.5	1,684	155	14,864	clearcut	3,530.8	339,698
	61-80	24.9	3,342	135	18,106	clearcut	3,370.4	452,380
	81-100	34.4	4,954		0	clearcut	1,855.9	267,250
	101-120		0		0	clearcut	72.4	9,673
	121-140		0		0	clearcut		0
	141+		0		0	clearcut		0
	Forest Unit Subtotal	81.5	10,187	352.9	34,327		13,200.9	1,216,099
MC1	1-20		0		0	clearcut	1,196.1	5,980
	21-40	6.9	234	27.8	943	clearcut	3,066.9	104,038
	41-60	11.8	884	2.8	210	clearcut	1,925.1	144,281
	61-80	13.6	1,428	7.0	735	clearcut	4,575.6	480,425
	81-100		0	5.8	665	clearcut	9,842.8	1,128,483
	101-120		0	13.6	1,649	clearcut	1,697.7	205,792
	121-140		0	5.2	622	clearcut	282.1	33,760
	141+		0		0	clearcut	36.6	3,918
	Forest Unit Subtotal	32.3	2,546	62.2	4,824		22,622.9	2,106,677
MC2	1-20		0		0	clearcut	3,633.1	19,902
	21-40		0	35.2	1,321	clearcut	8,409.4	315,613
	41-60		0	2.8	236	clearcut	4,389.0	369,841
	61-80	28.7	3,583	62.1	7,754	clearcut	7,675.8	958,374
	81-100		0	56.0	7,610	clearcut	7,310.3	993,429
	101-120		0		0	clearcut	1,177.1	151,877
	121-140		0		0	clearcut	117.1	14,171
	141+		0		0	clearcut	45.0	4,818
	Forest Unit Subtotal	28.7	3,583	156.1	16,921		32,756.8	2,828,024

Dryden Forest – Independent Forest Audit 2003-2008
Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

Forest Unit	Age Class	Protection Forest		Production Forest				
		Area (ha)	Volume (m3)	Unavailable		Stage of Management	Available	
				Area (ha)	Volume (m3)		Area (ha)	Volume (m3)
OCL	1-20		0		0	clearcut	95.9	0
	21-40		0		0	clearcut	33.8	68
	41-60		0	6.3	66	clearcut	89.1	936
	61-80	62.9	2,227	36.4	1,289	clearcut	182.7	6,468
	81-100	134.0	8,567		0	clearcut	302.8	19,359
	101-120		0	41.9	3,224	clearcut	171.8	13,220
	121-140		0	35.5	2,673	clearcut	268.3	20,203
	141+	9.6	645	3.5	235	clearcut	314.5	21,119
	Forest Unit Subtotal	206.5	11,438	123.6	7,487		1,458.9	81,371
OH1	1-20		0		0	clearcut	19.6	0
	21-40		0		0	clearcut	14.3	29
	41-60		0		0	clearcut	11.5	210
	61-80		0		0	clearcut	80.1	3,705
	81-100	7.2	489		0	clearcut	139.3	9,456
	101-120		0		0	clearcut	29.3	2,300
	121-140		0		0	clearcut		0
	141+		0		0	clearcut		0
	Forest Unit Subtotal	7.2	489	0.0	0		294.1	15,699
PJ1	1-20		0	6.2	34	clearcut	10,200.8	56,104
	21-40		0	66.5	2,592	clearcut	3,848.3	150,014
	41-60	8.2	677	15.4	1,272	clearcut	678.1	56,017
	61-80	11.8	1,377	7.7	899	clearcut	2,245.5	262,082
	81-100		0		0	clearcut	3,491.2	434,022
	101-120		0	7.7	934	clearcut	334.4	40,572
	121-140		0		0	clearcut	86.1	9,459
	141+		0		0	clearcut		0
	Forest Unit Subtotal	20.0	2,055	103.5	5,731		20,884.4	1,008,271
PO1	1-20		0		0	clearcut	2,450.4	22,054
	21-40		0	8.5	444	clearcut	1,279.4	66,877
	41-60		0	50.3	5,302	clearcut	1,185.5	124,951
	61-80		0		0	clearcut	1,331.6	196,065
	81-100		0		0	clearcut	457.8	67,538
	101-120		0		0	clearcut	38.9	5,297
	121-140		0		0	clearcut		0
	141+		0		0	clearcut		0
	Forest Unit Subtotal	0.0	0	58.8	5,746		6,743.6	482,782
PR1	1-20		0		0	clearcut	307.4	5,202
	21-40		0		0	clearcut	9.0	675
	41-60		0		0	clearcut	17.8	2,643
	61-80		0		0	clearcut		0
	81-100		0		0	clearcut	35.0	9,765
	101-120		0		0	clearcut	8.9	2,577
	121-140		0		0	clearcut		0
	141+		0		0	clearcut		0
	Forest Unit Subtotal	0.0	0	0.0	0		378.1	20,862
PRW	1-20		0		0	clearcut	20.0	140
	21-40		0		0	clearcut		0
	41-60		0		0	clearcut	40.0	4,112
	61-80		0		0	clearcut	47.8	6,742
	81-100		0	6.8	1,113	clearcut	29.6	4,845
	101-120		0		0	clearcut	46.7	7,507
	121-140		0		0	clearcut	31.6	4,928
	141+		0		0	clearcut		0
	Forest Unit Subtotal	0.0	0	6.8	1,113		215.7	28,274

Dryden Forest – Independent Forest Audit 2003-2008
Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

Forest Unit	Age Class	Protection Forest		Production Forest				
		Area (ha)	Volume (m3)	Unavailable		Stage of Management	Available	
				Area (ha)	Volume (m3)		Area (ha)	Volume (m3)
SBL	1-20	1.0	1	17.6	9	clearcut	494.0	247
	21-40	1.8	6	9.9	31	clearcut	283.0	891
	41-60	11.3	280	21.4	531	clearcut	560.6	13,909
	61-80	68.7	4,076	59.2	3,512	clearcut	869.5	51,584
	81-100	117.8	9,694	72.8	5,991	clearcut	1,601.9	131,818
	101-120	48.1	4,476	146.4	13,624	clearcut	1,327.9	123,571
	121-140	111.6	10,529	29.1	2,746	clearcut	711.1	67,091
	141+	44.5	3,559	1.7	136	clearcut	582.8	46,614
	Forest Unit Subtotal	404.8	32,620	358.1	26,579		6,430.8	435,724
SPU	1-20		0		0	clearcut	3,392.5	4,262
	21-40	0.8	14	18.9	322	clearcut	211.3	3,597
	41-60		0		0	clearcut	304.6	15,880
	61-80		0	1.4	121	clearcut	1,613.9	139,462
	81-100		0		0	clearcut	1,979.7	212,370
	101-120		0		0	clearcut	956.5	113,058
	121-140		0		0	clearcut	165.5	19,789
	141+		0		0	clearcut	144.3	15,996
	Forest Unit Subtotal	0.8	14	20.3	443		8,768.3	524,413
TOTAL ALL FOREST UNITS		781.8	62,932	1,495.8	119,402		116,047.8	8,877,844
TOTAL PRODUCTIVE FOREST							118,325.4	9,060,178

Source:
 Dryden Forest 2006-11 FMP Table FMP-9

Summary Report of Renewal, Tending and Protection Operations

Table 6- Summary Report of Renewal, Tending and Protection Operations is an annualized report summarizing planned vs. actual renewal, tending and protection operations over the three five-year planning periods. Actual figures for 2006-2011 represent the first year of operations.

The % actual artificial regeneration vs. total even-aged management for the three planning period are: 86% (97-2001), 75% (01-2006) and 64% (06-2011). This indicates a decrease in intensive silviculture. An increase in natural regeneration was anticipated as poplar became a more marketable species in the mid 90's and more stands are being harvested and regenerated naturally in this current plan.

Spacing and pre-commercial thinning has decreased in this current term compared to the previous term. During the 2001-2006 FMP productive sites that are supporting high densities of poplar were scheduled for spacing in order to reduce the age when these stands will reach merchantable age, however preliminary results showed that the stands were returning to their pre-spaced densities within a few years. Currently Jack pine stands that were established through aerial seeding on low nutrient sites are now being targeted for spacing.

Dryden Forest – Independent Forest Audit 2003-2008
Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

2008 Independent Forest Audit

MU: Dryden Forest

Table 6 - SUMMARY REPORT OF RENEWAL, TENDING AND PROTECTION OPERATIONS (Annualized)

	Area Summary of all Forest Units (ha) Annualized					
	1997-2001		2001-06		2006-11	
	Planned	Actual	Planned	Actual	Planned	Actual
Renewal						
Regeneration						
Uneven-Aged Management						
Selection Cut - Harvest						
Total Uneven-Aged Management						
Even-Aged Management						
Natural Regeneration						
Clearcut	430.4	202.8	328.8	299.8	291.6	634
Strip Cut				3.4		
Seed Tree Cut						
Uniform Shelterwood Seed Cut						
Subtotal Natural	430.4	202.8	328.8	303.2	291.6	634
Artificial Regeneration						
Planting	423.4	519.7	759.8	591.6	570.6	815
Seeding: direct	558.8	690.3	304.4	302.8	412	298
with site preparation						
Scarification						
Subtotal Artificial	982.2	1210	1064.2	894.4	982.6	1113
Total Even-Aged Management	1412.6	1412.8	1393	1197.6	1274.2	1747
Total Regeneration	1412.6	1412.8	1393	1197.6	1274.2	1747
Site Preparation						
Mechanical	972	1153.9	1068	829	930	450
Chemical				16.8		
Prescribed Burn						
Total Site Preparation	972	1153.9	1068	845.8	930	450
Tending						
Cleaning						
manual	41		26.2	111.8		
chemical - ground			15		71.6	
- aerial						
mechanical						
prescribed burn						
Spacing, pre-commercial thinning, improvement cutting						
even-aged	135	157.2	541.8	297.6	151.8	165
uneven-aged						
Cultivation						
Total Tending	176	157.2	583	409.4	223.4	165
Protection (Insect Pest Control)						
accelerated harvest						
salvage						
manual protection						
ground insecticide						
aerial insecticide						
Total Protection						

Source:

Planned: Dryden Forest 1997-2002, 2001-06 & 2006-11 FMP Table FMP-25

Actual: Dryden Forest 1997-2002 RPFO Table RPFO-7, 2005-06 & 2006-07 AR Table AR-7

Harvested Area Successfully Regenerated-Summary of All Forest Units

Table 7 - Harvested Area Successfully Regenerated-Summary of All Forest Units is designed to indicate whether or not harvested areas have been successfully regenerated during a five year harvesting period.

Harvest data for the period 1993-1998 is to be based on actual reported harvest for each year. According to the 5 Annual Reports produced during this time frame 5,017 ha was depleted; however DFMC's Geographical Information System (GIS) database identifies 6,100 ha. of depletions during the five-year period of 1993 to 1998. The discrepancy between the amount of area harvested in the Annual Reports and the GIS data base is due to a simplified procedure in the GIS updates. As a result of the large number of small harvesting contractors operating on the Dryden Forest, harvest blocks took anywhere from 1 to 4 years to complete. Although the Annual Report detailed the exact amount of

hectares depleted each year, when DFMC created the GIS database, harvest blocks were given only one depletion year, usually the final year of harvest. This was compatible with the silviculture coverage as the harvest blocks were not usually treated until the entire block was harvested. For example a harvesting contractor may have been harvesting a 80 ha. area in 1992, but did not complete it until 1995. In the GIS data base the whole block would be classified as depleted in 1995.

Since DFMC is able to track individual stands and Free to Grow information more accurately in the GIS database, which will provide a realistic view of the amount of harvest area successfully regenerated, Table 7 "Total Harvest Area" reflects the amount found in the GIS database (6,100 ha.).

Therefore according to Table 7, 94% of the area harvested from the period 1993-1998 was surveyed, with 6% (366 ha.) being unsurveyed.

An analysis of the unsurveyed area revealed that there are three reasons why there still remain 366 ha. of unsurveyed area.

Firstly, a portion of the area was scheduled for surveying in 2006. Unfortunately the survey contractor did not complete the contract before winter set in and the area was accidentally not re-contracted out in the 2007 survey. The area is now in the 2008 Regeneration survey contract and will be completed before August 31, 2008.

Secondly there are a number of small areas that have adjacent larger areas that were harvested a few years later. As a cost saving measure they have been scheduled to be surveyed along with the larger areas. It is anticipated that all these smaller areas will be surveyed by 2010.

Thirdly there are a few areas that are lowland areas that are not due for free to grow surveys until 10 years post treatment, which will be in 2009.

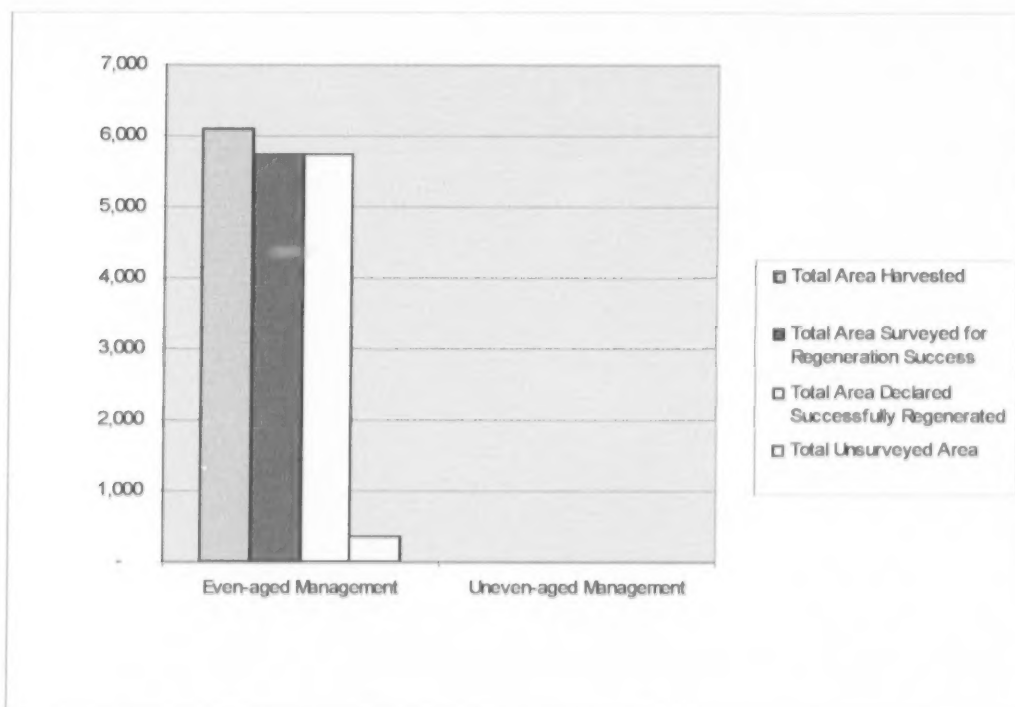
And lastly the Table 7 reports that 94% of the area harvested from the period 1993-1998 has been declared successfully regenerated.

2008 Independent Forest Audit

Table 7 - Harvested Area Successfully Regenerated - Summary of All Forest Units

MU: **Dryden Forest**

	AREA IN HECTARES (All Forest Units Combined)	AREA IN HECTARES (All Forest Units Combined)
	Even-aged Management	Uneven-aged Management
Total Area Harvested	6,100	-
Total Area Surveyed for Regeneration Success	5,734	-
Total Unsurveyed Area	366	-
Total Area Declared Successfully Regenerated	5,734	-
Total Area Surveyed Not Successfully Regenerated	-	-
NSR	-	-
B&S	-	-
Not Available for Regen. (eg. Roads & landings)	-	-
Other	-	-
Percent of Area Surveyed Declared Successfully Regenerated	100.0%	



Source: Total area harvested: DFMC GIS database
Survey results: DFMC GIS database

APPENDIX B – AUDIT TEAM MEMBERS AND QUALIFICATIONS

Name	Role	Responsibilities	Credentials
Mr. Peter Higgelke	Lead Auditor Wildlife/Ecology Auditor	Overall audit coordination and oversight of activities of the audit team; review of management objectives, contractual obligations, and forest sustainability; inspect AOC documentation and practices; audit aspects of forest management related to environmental protection and wildlife practices.	R.P.F., M.Sc.F.; 28 years combined forestry experience in Ontario, Quebec, and Germany; Lead Auditor on 2 Independent Forest Audits, Wildlife Auditor on one Forest Management Agreement Review and six Independent Forest Audits; Harvest Auditor on six previous Independent Forest Audits.
Mr. Laird Van Damme	Harvest Auditor Planning Auditor	Assess access and harvest planning and implementation; assess adherence to forest management planning requirements; assist in assessment of achievement of management objectives and forest sustainability.	R.P.F., M.Sc.F.; 22 years experience as a practising forester, educator and consultant; primary areas of practice are silviculture, forest management and forest research; completed five-day ISO 14001 EMS Lead Auditor training course; worked on 15 previous Independent Forest Audits as either Lead, Harvest or Planning Auditor.
Mr. Brad Chaulk	Silviculture Auditor Planning Auditor	Assess silvicultural planning and operations; assess adherence to forest management planning requirements; assist in assessment of achievement of management objectives and forest sustainability.	R.P.F.; 16 years of forestry experience including forest management and operational planning; auditor on 12 previous Independent Forest Audits.
Mr. Keith Hautala	Modeling Auditor	Review SFMM strategic planning; assist in assessment of achievement of management objectives and forest sustainability.	M.Sc.F.; 10 years of forestry experience in Ontario; Modeling Auditor on seven previous Independent Forest Audits; Secretariat on three previous Independent Forest Audits
Ms. Terri Dawyd	Public Consultation & Aboriginal Involvement Auditor Audit Secretariat	Assess various components of the audit including public consultation and Aboriginal involvement in forest management planning, and elements of forest management planning, system support, monitoring, and contractual obligations; provide general support in the development of the Independent Forest Audit including logistics, evidence gathering and report development.	H.B.Sc.F. candidate; 7 years of forestry experience including technical field work, Aboriginal forestry project manager; served as Secretariat on four previous Independent Forest Audits.

APPENDIX C – INDEPENDENT FOREST AUDIT GUIDING PRINCIPLES

Principle 1: Commitment
Commitment is reflected in vision, mission and policy statements of the company and adherence to legislation and policies. Vision and mission statements are intended to provide long-term guidance for the organization. Policy statements reflect how the organization's vision and mission will be achieved. These statements must be reflected in the day-to-day operations of the organization.
Principle 2: Public Consultation and Aboriginal Involvement
The process of sustainable forest management planning, implementation and monitoring must be conducted in an open consultative fashion, with the involvement of the Local Citizens Committee, Aboriginal communities, and other parties with an interest in the operations of the forest management unit.
Principle 3: Forest Management Planning
The forest management planning process involves input from all members of the planning team as well as public consultation and Aboriginal involvement to describe the current forest condition, values and benefits to be obtained from the forest, the desired condition of the forest in the future, and the best methods to achieve that goal. Planning requirements have been established which must be followed by all forest management units.
Principle 4: Plan Assessment and Implementation
Verification of the actual results of operations in the field compared to the planned assumptions and planned operations is required to be able to assess planning as well as the effective achievement of plan objectives and compliance with laws and regulations.
Principle 5: System Support
System support concerns resources and activities needed to support plan development and implementation so as to achieve the desired objectives. The organization's human resources and information management systems must support sustainable forest management.
Principle 6: Monitoring
Monitoring programs must be developed and implemented to assess compliance and effectiveness of operations in relation to the FMP, laws and regulations. Operations must be reported regularly and reporting must examine the effectiveness of these operations in achieving management objectives.
Principle 7: Achievement of Management Objectives and Forest Sustainability
Periodic assessments of the forest management unit operations must be made in order to determine whether management objectives, including forest sustainability objectives, are being achieved. This includes comparing the values of the planned indicators against the actual values and assessing the reasons for any significant deviations.
Principle 8: Contractual Obligations
The licensee must comply with the specific licence requirements. Specific requirements, when relevant to MNR, must be followed.

Source: 2008 Independent Forest Audit Process and Protocol

APPENDIX D – LIST OF ACRONYMS

ACOP	Annual Compliance Operating Plan
AOC	Area of Concern
AR	Annual Report
AWS	Annual Work Schedule
B&S/NSR	Barren & Scattered/Not Sufficiently or Satisfactorily Restocked or Regenerated
CFSA	Crown Forest Sustainability Act
CNFER	Centre for Northern Forest Ecosystem Research
DFMC	Dryden Forest Management Company Ltd.
FEC	Forest Ecosystem Classification
FFTC	Forestry Futures Trust Committee
FIM	Forest Information Manual
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FOIP	Forest Operations Information Program
FOP	Forest Operation Prescription
FOSM	Forest Operations and Silviculture Manual
FRI	Forest Resources Inventory
FTG	Free-to-grow
GIS	Geographic Information System
GPS	Global Positioning System
HPA	High Priority Aspects
IFA	Independent Forest Audit
IFAPP	Independent Forest Audit Process and Protocol
KBM	KBM Forestry Consultants Inc.
LCAC	Local Citizens Advisory Committee
MNR	Ministry of Natural Resources
NDPEG	Natural Disturbance Pattern Emulation Guide
NOEGTS	Northern Ontario Engineering Geological Terrain Survey
NRVIS	Natural Resource Values Information System
OLL	Overlapping Licence/Licensee
R.P.F.	Registered Professional Forester
RPFO	Report of Past Forest Operations
SEV	Statement of Environmental Values
SFL	Sustainable Forest Licence
SFM	Sustainable Forest Management
SFMM	Strategic Forest Management Model
SGR	Silvicultural Ground Rules
SIP	site preparation
SMA	Selected Management Alternative
TAR	Comparison and Trend Analysis of Planned versus Actual Forest Operations Report

APPENDIX E – SUMMARY OF INPUT TO AUDIT PROCESS

General Public/Other Stakeholders

Newspaper ads were published in two area newspapers prior to the pre-audit meeting advising the public of the upcoming audit including the *Dryden Observer* and the *Wawatay News*.

KBM prepared a one page mail-out survey to solicit public input to the audit process. The survey, in addition to a general letter informing contacts of the audit, was mailed to businesses and organizations (144 mail-outs sent), and a representative sample of one-third of the individuals (109 mail-outs sent) listed in the FMP mailing list (as provided by MNR Dryden District). This list includes tourist operators, private land owners, trappers, baitfish licence holders, bear management area holders, local municipalities and government agencies, independent loggers, logging contractors, shareholders and other special interest groups.

Eight responses to the public notices and survey were received from the public. All comments and applicable audit team responses are summarized in the following table.

	Comment or Concern	Audit Team Response
1	General concerns over road access and limited resources set aside for future maintenance of public roads to avoid abandonment. Respondent indicated that they have contacted both MNR and DFMC in the past and been satisfied with the response.	In conversation with DFMC shareholders it was learned that they had had the same concern in the past, however, the current roads funding made available by MNR has enabled DFMC to do some road rehabilitation on public access roads that otherwise the company would not have had the funds to do.
2	No concerns specified, only indicated that they have contacted District MNR in the past and were satisfied with the response.	None required.
3	Concerns over layoffs at the local mill. Has issue with the apparent lack of concern for wildlife during forest management activities. Suggested that there are areas on their trapline near Pritchard Lake and Bob Lake (north end) where renewal activities have not occurred on areas recently harvested (off Fort Frances Hwy). Also identified areas harvested north of Dryden around Gullwing Lake and on the way to Lac Seul Lake that have not been planted. Respondent contacted the District MNR and DFMC and was not satisfied with the response. Concerns about wasteful practices, specifically regarding white pine, red pine and poplar being pushed into piles and burned or left to rot but no specific locations identified.	This issue is outside the audit scope. The locations are on a neighbouring SFL.
4	Comment on the high quality of reforestation practices.	None required.
5	No comments or concerns specified, only indicated that they have contacted District MNR in the past and were satisfied with the response.	None required.
6	Comment that the Dryden Forest is a "well run forest". Indicated that they have contacted DFMC in the past and were satisfied with the response.	None required.
7	Identified an area on Muiirie Twp Road, off Wabigoon River Road, that was cleaned-up well after the cut and the regeneration is coming along nicely. As a trapper, respondent	None required.

	Comment or Concern	Audit Team Response
	indicated that they have been notified well in advance of any proposed harvest areas on their trapline, and that harvest operations are clean and the area replanted. Any requests or concerns raised with DFMC have been addressed in a positive manner with agreeable results – specifically, a request to change a proposed cut area was acted upon by the company.	
8	Comment that public notification was insufficient for planned harvest areas on Farabout Peninsula. The respondent was not satisfied with response by MNR. The respondent and a group of concerned citizens became aware of the planned allocations at the Inspection of Approved Plan stage of consultation for the 2006 Dryden Forest FMP.	Auditors contacted the respondent to discuss the concern which is ongoing. Auditors also discussed the issue with MNR District Area Supervisor and Area Forester. Auditors reviewed the public consultation records for the 2006 Dryden Forest FMP and MNR was found to have met all requirements. The District Manager, MNR staff, and DFMC are currently working with the respondent and other concerned citizens towards a resolution.

Local Citizens' Advisory Committee

Letters were mailed to all current (and some past) members of the LCAC to notify them of the audit and invite their input. A member of the LCAC attended the pre-audit meeting in Dryden on July 29, 2008. A member of the audit team met with LCAC members present at their meeting of September 10, 2008 to discuss their involvement in the development of the Dryden Forest 2006-26 FMP, whether in their view the LCAC has achieved its purpose, and if there are areas where the LCAC may be improved. An LCAC member also attended the audit closing meeting on September 12, 2008.

LCAC comments are included, where appropriate, in Section 3.2.1.

Aboriginal Communities

A letter was mailed to each of the Aboriginal communities on the contact list inviting them to participate in the audit. The letter explained that their input is welcomed and encouraged them to contact KBM if they wish to participate in the audit or if they require more information before making a decision. KBM did not receive any responses to the letter.

Through follow-up phone calls KBM was able to speak with a representative of Wabigoon Lake Ojibway Nation and meet directly with representatives of Eagle Lake First Nation. Repeated phone calls to the Aboriginal People of Wabigoon did not garner a response.

Comments from representatives of Wabigoon Lake Ojibway Nation and Eagle Lake First Nation are included in Section 3.2.5 where appropriate.

Overlapping Licensees, Contractors and Commitment Holders

KBM was able to meet directly with representatives of Eagle Lake First Nation. Repeated phone calls to the Aboriginal People of Wabigoon did not garner a response. Letters were sent to the four commitment holders. An email response was received from Domtar and no problems were identified. Devlin Timber Company Ltd. (in Kenora) and Oxdrift Tractor Sales Sawmill (in Oxdrift) permanently closed their

sawmilling operations in 2004 and 2005 respectively and a response was not received from representatives of either mill. No response was received from Levesque Plywood Limited whose mill in Nipigon was also idled during the conduct of this audit.

SFL Holder

Personal interviews were held with the General Manager and Operations Forester. The General Manager accompanied the audit team on both field days, while the Operations Forester attended one field day. The General Manager also accompanied the Lead Auditor on an additional field tour to specifically view water crossings. The auditors appreciate DFMC's efforts in providing the auditors with information in a organized and timely manner as requested, particularly the amazing and comprehensive field books that included SAP photos which allowed the auditors to make informed assessments on-the-spot while in the field.

Two shareholders accompanied the audit team for one field day and had discussions with various auditors. One shareholder attended the pre-audit meeting, one attended the audit opening meeting and three shareholders were present at the closing meeting.

Ministry of Natural Resources

Personal interviews were held with the District Manager, Area Supervisor, Area Forester, Area Biologist, Area Technicians, Regional Biologist and Regional Aggregate Pit Inspector. MNR District personnel also accompanied the audit team in the field for one day including the Area Forester, the former Area Biologist, and Area Technician. The audit opening and closing meetings were attended by MNR District personnel, including the District Manager.

One MNR Northwest Region representative participated in the pre-audit meeting via teleconference. Two Regional representatives accompanied the audit team on one field day and participated in the audit closing meeting via teleconference.

One representative from MNR Forest Management Branch attended one field day and participated in the audit closing meeting via teleconference.

One representative from the Forestry Futures Trust Committee attended one field day and also participated in the closing meeting via teleconference.

**KBM FORESTRY CONSULTANTS INC.
2008 INDEPENDENT FOREST AUDIT
PUBLIC SURVEY**



Every five years, as part of the Province's responsibility for resource management in Ontario, the Ministry of Natural Resources (MNR) contracts firms to evaluate forest management activities on Crown lands. KBM Forestry Consultants Inc. of Thunder Bay, Ontario has been engaged by the MNR this year to conduct an independent forest audit of the Dryden Forest **for the period April 1, 2003 – March 31, 2008.**

As part of our evaluation, we would appreciate your input as a member of the public with an interest in forest management on the Dryden Forest. If you have comments related to forestry activities during the five-year period April 1, 2003 to March 31, 2008, please complete and submit this form (please see back of sheet for more information on the audit process).

KBM provides this opportunity to comment on the Dryden Forest audit, under the authority of Ontario Regulation 160/04 made under the Crown Forest Sustainability Act, 1994. Any personal information provided will be used solely by the audit team as input to the Dryden Forest Independent Forest Audit. Any questions regarding the collection, use, and retention of the personal information can be directed to Peter Higgelke, Lead Auditor at 807-345-5445 ext. 231 (email: higgelke@kbm.on.ca) or to the company address indicated below.

Name:

(optional)

Tel. and/or email:

(optional)

What is your interest in forest management on the Dryden Forest?

Recreation ☐

Employment ☐

Conservation ☐

Other ☐

(e.g. forestry, tourism, etc.)

Can you identify any specific locations or activities on the Dryden Forest that illustrate good **OR** poor management practices, and that the audit team should be aware of in conducting their evaluation? Please provide specific details.

Have you ever contacted forest managers with comments or concerns during the 2003-2008 audit period?

☐ Yes ☐ No

Whom did you contact?

(e.g., local MNR, Dryden Forest Management Company Limited)

If Yes, were you satisfied with the response? ☐ Yes ☐ No If you were not satisfied, why not?

Feel free to add any additional comments (use additional sheet if required).

6. Please indicate if we may contact you for more information. ☐ Yes ☐ No

(If Yes please ensure that you have provided your contact information above.)

Please **mail, email, or fax** the completed survey to the address/fax number below by **August 29, 2008.**

The survey can also be accessed through our website at www.kbm.on.ca

Although we cannot respond to everyone, we do take into consideration all comments received.

Thank you in advance for your input.

KBM Forestry Consultants Inc.

tdawyd@kbm.on.ca

<http://www.kbm.on.ca>

349 Mooney Avenue
Thunder Bay, ON P7B 5L5

Tel: (807) 345-5445 ext. 233

Fax: (807) 345-5858

Toll-free: 1-800-465-3001

INDEPENDENT FOREST AUDIT

Dryden Forest

KBM Forestry Consultants Inc. has been retained by the Ministry of Natural Resources (MNR) to conduct an Independent Forest Audit, consistent with the Crown Forestry Sustainability Act, on the management of the Dryden Forest.

The audit covers the **April 1, 2003 to March 31, 2008** operating period. **You are invited** to comment on the forest management activities on the Dryden Forest for this period of time. Please provide your comments by **Friday, August 29, 2008** to:

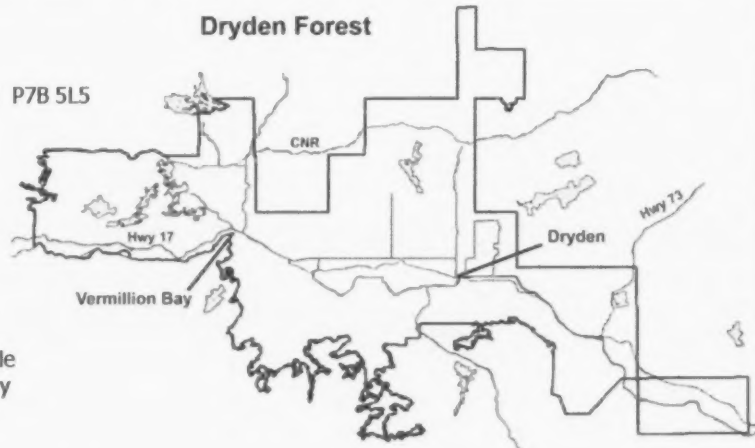
Terri Dawyd
KBM Forestry Consultants Inc.
349 Mooney Ave., Thunder Bay, ON P7B 5L5
Email: tdawyd@kbm.on.ca
Tel: (807) 345-5445 ext. 233
Fax: (807) 345-5858
Toll-Free: 1-800-465-3001

(All correspondence sent to KBM is confidential.)

Alternatively, comments can be made directly to the Local Citizens Advisory Committee Chairperson:

Peter Brunner, Chair
Dryden Forest Local Citizens Advisory Committee
Email: pbrunner@drytel.net
Tel: (807) 938-6417

(The privacy of any information given to the LCAC may not necessarily be protected).



Purpose of the Independent Forest Audit

The Purpose of the audit is to assess:

- compliance with the Crown Forest Sustainability Act,
- compliance with the Forest Management Planning Process,
- a comparison of planned versus actual forest management activities,
- the effectiveness of forest management activities in achieving audit criteria and management objectives,
- the effectiveness of previous audit action plans, and
- where applicable, a licensee's compliance with the terms and conditions of the Sustainable Forest Licence.

The five-member audit team will evaluate forest management planning and practices such as harvest operations, forest renewal activities, road construction and maintenance as well as opportunities for public input and Aboriginal communities consultation. The main objectives of the audit are to assess compliance with provincial laws and regulations as well as comment on the effectiveness and sustainability of forestry activities on the management unit.

In addition, the independent forest audit provides an opportunity to improve Crown land management in Ontario through adaptive management. The audits are conducted by consultants that are independent of the Ministry of Natural Resources and the companies being audited, and firms are selected in an arms-length process by the Forestry Futures Committee of Ontario.

Public notice published in the *Dryden Observer* and *Wawatay News*.

DRYDEN FOREST INDEPENDENT FOREST AUDIT

KBM Forestry Consultants Inc. of Thunder Bay, Ontario has been retained by the Ontario Ministry of Natural Resources to conduct an Independent Forest Audit, consistent with the Crown Forest Sustainability Act on the management of the Dryden Forest. The purpose of the audit is to assess forest management activities within the Dryden Forest during the five-year audit period from **April 1, 2003 to March 31, 2008**. Specifically:

- compliance with the Crown Forest Sustainability Act;
- compliance with the Forest Management Planning process;
- a comparison of planned versus actual forest management activities;
- the effectiveness of forest management activities;
- the effectiveness of previous audit action plans; &
- compliance with the terms and conditions of the Sustainable Forest Licence.

You are invited to comment on forest operations on the Dryden Forest for this period of time. Please provide your comments by **FRIDAY, AUGUST 29, 2008** directly to the Local Citizens Advisory Committee Chair:

Dryden Forest LCAC Chair

Peter Brunner

Email: pbrunner@drytel.net

Tel: 807-938-6417

The privacy of information given to the LCAC may not necessarily be protected.

Alternatively, comments can be sent directly to:

Terri Dawyd

KBM Forestry Consultants Inc.

349 Mooney Avenue

Thunder Bay, ON P7B 5L5

Tel: 807-345-5445 ext. 233 Fax: 807-345-5858

Toll Free: 1-800-465-3001 Email: tdawyd@kbm.on.ca

All correspondence sent to KBM is strictly confidential.

For more information or to download and complete our public audit survey please visit: www.kbm.on.ca

